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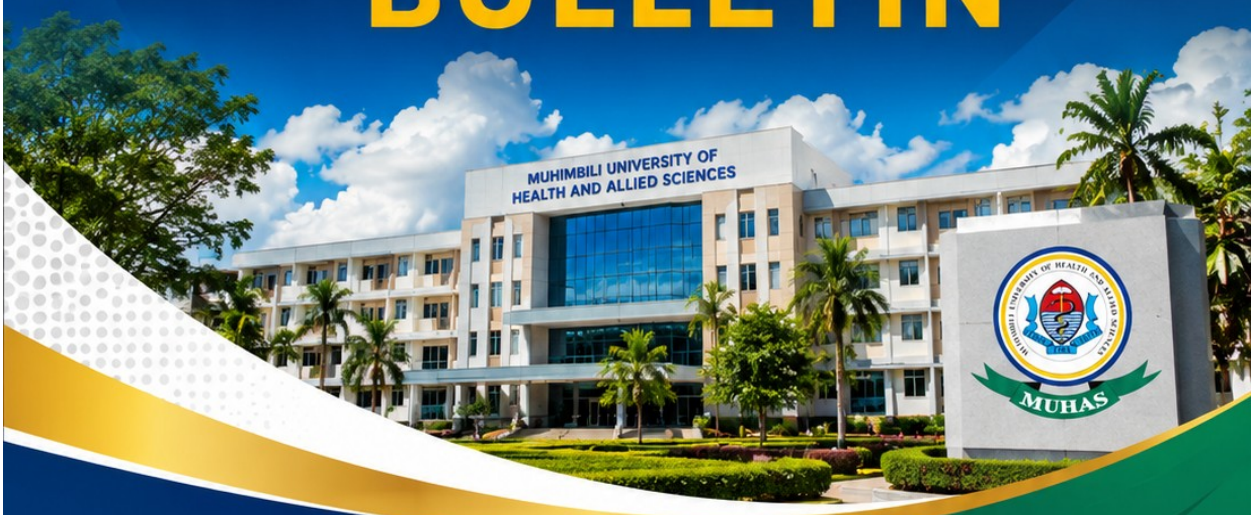
MUHAS

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DAR ES SALAAM, TANZANIA

DIRECTORATE OF
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RESEARCH BULLETIN



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FOREWORD

Muhimbili University of Health and Allied Sciences (MUHAS) is pleased to present Volume 24 of its Research Bulletin. This publication reflects the University's strong commitment to advancing research and informs readers and stakeholders across the education sector. Through this commitment, the bulletin provides an opportunity to engage with diverse perspectives and address key professional challenges in educational research.

The research papers featured in this bulletin address a wide range of issues that are expected to stimulate critical thinking in tackling the challenges faced by communities. In doing so, they contribute to an informed and productive learning environment. The bulletin will continue to serve as a platform for the exchange of ideas, the sharing of knowledge and information, and the promotion of lifelong research engagement.

I extend my sincere appreciation to the University Publishing House, through the Directorate of Library Services, for their invaluable effort in making the publication of this research bulletin possible.

Prof. Appolinary Kamuhabwa
Vice Chancellor
Muhimbili University of Health and Allied Sciences
December 2025, Dar es Salaam.

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PREFACE

Muhimbili University of Health and Allied Sciences (MUHAS) is pleased to present Volume 24 of its Research Bulletin to its researchers and readers. The bulletin offers an opportunity to explore diverse perspectives and address emerging professional challenges in educational research.

The papers featured in this issue promote critical thinking across a range of disciplines. The bulletin serves as a platform for students, professionals, and the wider community to exchange ideas, share knowledge and information, and support scholars in building sustainable, lifelong research careers.

The bulletin also aims to minimize duplication of research efforts among scholars within and beyond MUHAS. Due to space limitations, this issue provides summaries that include authors' names, titles, volumes, issues, DOIs, and abstracts. Full-text versions, where available, can be accessed through the MUHAS Institutional Repository.

I wish to acknowledge the MUHAS management for their continued support, particularly the Vice Chancellor, Prof. Appolinary Kamuhabwa; the Deputy Vice Chancellor (Academics), Prof. Emmanuel Balandya; the Deputy Vice Chancellor (Research), Prof. Bruno Sunguya; and the Director of Postgraduate Studies, Prof. Doreen Kamori, for their encouragement and moral support throughout the preparation of this research bulletin. I also extend my sincere gratitude to the Director of Research, Publications, and Innovation, Prof. Nahya Salim, for her valuable advice, material support, and approval of the initial drafts of this bulletin

Finally, I commend all of the librarians for their professionalism in searching, retrieving, and compiling the content, which made the successful production of this bulletin possible.

Dr. Rehema Chande-Mallya
Director, Directorate of Library Services
Muhimbili University of Health and Allied Sciences
December 2025, Dar es Salaam.

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EXECUTIVE SUMMARY

Volume 24 of the MUHAS 2025 Research Bulletin presents a consolidated, systematically organized record of research outputs produced by members of the University. The compilation reflects MUHAS's breadth of scholarship and illustrates the strength of the academic research pipeline, from scholarly inquiry to dissemination through peer-reviewed publication and postgraduate scholarship.

In academic terms, this Bulletin supports knowledge discovery and scholarly productivity by enabling readers to identify active and emerging research themes, locate relevant work for further study, and strengthen potential cross-disciplinary collaboration. For institutional stakeholders, the Bulletin also provides a practical basis for monitoring research performance and informing strategic directions to enhance research quality, visibility, and impact.

Thus, Volume 24 serves as a credible reference that promotes responsible use of research information, minimizes unnecessary duplication of effort, and encourages sustained engagement in lifelong research careers.

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EDITORIAL

This Research Bulletin features papers published by staff of Muhimbili University of Health and Allied Sciences (MUHAS) between January and December 2025. While every effort has been made to ensure comprehensive coverage, some publications may have been inadvertently omitted. The Directorate of Library Services is compiling a database of all publications not included in this issue that were produced during the period under review. These will be incorporated into the next issue once they are brought to our attention.

Authors are therefore kindly requested to notify the Directorate and submit a digital copy of their published paper or article for inclusion in the MUHAS Institutional Repository.

Dr. Rehema Chande-Mallya
Editor-in-Chief
Directorate of Library Services
Muhimbili University of Health and Allied Sciences
December 2025, Dar es Salaam

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INFORMATION TO READERS

This Research Bulletin presents information on research conducted by members of staff at Muhimbili University of Health and Allied Sciences (MUHAS). It includes summaries of publications such as journal articles, theses, dissertations, and conference proceedings from the preceding year. The current research bulletin, Volume 24, contains 1,147 abstracts, of which 675 are abstracts from journal articles, while 472 are abstracts for theses and dissertations, as depicted in Figure 1.

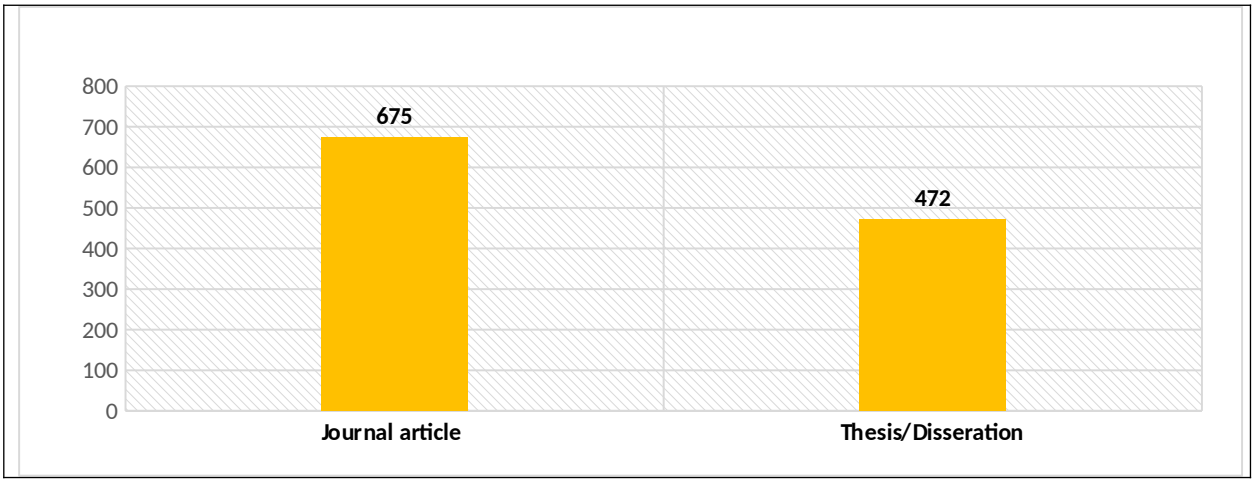


Figure 1: *Journal Articles, Theses and Dissertations Published by MUHAS.*

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CHAPTER ONE
JOURNAL ARTICLES

1. Aamir, M.K., Afadhali, D.R., (2025). The Occurrence of Congenital Flatfoot in Primary School Children in Dar es Salaam, Tanzania. *Tanzania Medical Journal,* Vol. 36(2). Doi:10.4314/1p48zq45.

Abstract

Background: One of the major reasons for orthopedic consultation during the first decade of life is flatfoot. Flat-footedness may be classified into two main types namely pathological or physiological. The main objective of this study was to assess the occurrence of flatfoot in primary school children in terms of prevalence and anatomical presentation. **Materials and Methods:** This study carried out at a primary school in Temeke district in Dar es Salaam. We recruited 159 children between the ages of 6 and 10 years. Any child with a history of foot pathology which may interfere with foot readings e.g. foot ulcers, fractures, sores etc. were excluded from this study. The method proposed to determine flat footedness in this study is the Staheli Plantar Arch Index method. **Results:** Only 9.4% (n=15) of the participants examined had flatfoot. Of the 15 participants who had flat foot 46.7% (n=7) had flatfoot bilaterally. The plantar arch index of the right foot of the children examined ranged between 0.39 and 1.65 (mean of 0.87 ± 0.23). The plantar arch index of the left foot of the children examined ranged between 0.26 and 1.91 (mean of 0.88 ± 0.28). **Conclusion:** Flatfoot is a relatively common orthopedic condition in childhood with a prevalence of 9.4% in this study.

Keywords: *Flat foot, Plantar arch index*

2. Abad, P., Pérez-Benavente, S., Pérez-Luz, S., *et al*… (2025). Coinheritance of polymorphic alleles of PIEZO1, G6PD, and HBB enhances protection against malaria. Vol. 20. Doi: 10.1016/j.onehlt.2025.101051.

Abstract

Malaria has exerted potent selective pressure on the human genome over millennia and has been a significant force in shaping human evolution. We have determined in 424 individuals living in malaria-hyperendemic areas in Ghana and in the Democratic Republic of Congo, the genotypes at the loci PIEZO1, G6PD, HBB, and PKLR. By qPCR we have also estimated P. falciparum parasitemia in all these subjects. We found that 41% of individuals tested had one protective variant, 20.5% two variants, 6.4% three variants, and 0.7% four variants. We have confirmed that Pz_E756del, G6pd A-, and HbS are associated with lower parasite density. The highest allele frequency was that of Pz_E756del, approaching 0.2, and we found that it is in linkage disequilibrium with Pz_E750Q. While overall malaria prevalence did not differ significantly among the groups, non-pregnant individuals with multiple protective alleles had lower rates of high-density parasitaemia, suggesting an additive effect of these variants against severe malaria infection, while pregnancy showed a different allele protection profile. The high frequency of individuals carrying two or more protective polymorphisms might have implications for malaria

transmission and parasite reservoir maintenance. Thus, the significance of additive or possibly synergistic effects of multiple protective genes co-existing in the same person deserves further investigation.

Keywords: *Malaria, Piezo1, G6PD, Hemoglobin, PKLRS, Sickle Cell Polymorphism, Protection, Tolerance, Resistance.*

3. Abbas, Z.G., Nair, H.K.R. (2025). Journey from the Step-by-Step Diabetic Foot Programme to Train the Foot Healthcare Professionals: 22 years of preventing amputation globally. *Global Wound Care Journal*, Vol. 1(1). Doi:10.63896/gwcj.1.1.42.

Abstract

High rates of morbidity and mortality are associated with diabetes-related foot complications, which are on the rise worldwide. Between 40% and 60% of all lower extremity non-traumatic amputations performed globally are on patients with diabetes. Every 20 seconds, a lower limb is lost to diabetes worldwide, yet the majority of these amputations could have been prevented with simple foot care interventions, regular screening, and proper education. Despite this urgent need, healthcare professionals remain insufficiently trained in delivering simple yet effective diabetic foot care, leaving patients vulnerable to avoidable amputations. Amputation rates can be decreased by up to 85% by prophylactic measures, close patient monitoring, multidisciplinary treatment of foot ulcers, and education of healthcare staff on proper foot care. The Step-by-Step (SbS) Diabetic Foot programme, which was piloted and implemented in Tanzania and India in 2003, is an example of education. Crucially, the research was linked to a decrease of more than 50% in amputation rates in Tanzania. Due to the success of the programme, there is a growing demand for the adoption of the SbS programme in other countries. D-Foot International launched the Train the Foot Healthcare Professionals programme to overcome the challenges of reaching every country. The goal was to bring trainers from various nations in the region together and train healthcare professionals to execute SbS programmes when they return to their home countries. This paper provides a concise description of this innovative and successful implementation effort. The 22-year journey began in Tanzania in 2003 and culminated in global healthcare professional training, serving as a working model to reduce amputation and mortality.

Keywords: *Step-by-Step, Diabetes, Diabetic foot, Education programme.*

4. Abdallah, I., Balandya, B., Mwangu, M., *et. al*… (2025). Barriers to HPV vaccination among adolescent schoolgirls in Morogoro, Tanzania: insights for improving coverage. *International Journal of Gynecological Cancer*, Vol. 35(11). Doi: 10.1016/j.ijgc.2025.102384.

Abstract

Introduction: Cervical cancer remains the leading cause of cancer-related morbidity and mortality among women in Tanzania, with approximately 9,772 new cases and 6,695 deaths annually - nearly all linked to HPV infection. In response, Tanzania introduced the HPV vaccine in

2018 for 14-year-old girls. However, vaccine coverage, particularly for the second dose, remains suboptimal. This study investigates the factors contributing to the low uptake of the HPV vaccination. **Methods:** A mixed-methods analytical study was conducted in Morogoro Municipal Council, involving schoolgirls aged 14–16 years, their parents or guardians, and the Council Health Management Team (CHMT). A multistage stratified sampling technique was employed to obtain 416 schoolgirls who completed a self-administered, structured questionnaire. The Wilcoxon rank-sum test compared HPV knowledge between vaccinated and unvaccinated girls. We conducted four focus group discussions (FGDs) with parents and three in-depth interviews (IDIs). Thematic analysis was applied to interpret the qualitative data. **Results:** Only 27% (n = 111) of study participants completed the full HPV vaccine series. HPV knowledge is significantly associated with vaccine uptake ($P<0.05$). Focus group discussions identified several barriers to vaccination, including myths and misconceptions, fear of infertility, religious beliefs, cultural traditions, and low community awareness of the HPV vaccine. **Conclusion/Implications:** The proportion of participants who completed the HPV vaccine series was notably low. Vaccine uptake was significantly associated with HPV knowledge, while socio-cultural factors emerged as the primary barriers. Strengthening community sensitization efforts is essential, and further research is needed to identify the most effective strategies for HPV vaccine awareness in Tanzania.

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5. Abdatam, M., Nhungo, C.J., Muhamba, F., *et al*… (2025). Apert syndrome: a rare congenital anomaly and experience from a low-resource country: a case report and review of the literature. *Journal of Rare Diseases*, Vol. 4(1). Doi:10.1007/s44162-024-00064-9

Abstract

Background: Apert syndrome is a congenital condition characterized by coronal craniosynostosis, ex-orbitism, midface hypoplasia as well as symmetric syndactyly of both feet and hands. Apert syndrome is linked by autosomal dominant inheritance to fibroblast growth factors receptor gene alteration. **Case presentation:** We present the case of a 20-month-old African boy who exhibited the characteristic facial features of Apert syndrome. Additionally, the child presented with syndactyly of both the fingers and toes. He was born to non-consanguineous parents, with the father being 33 years old at the time of the child's birth. A skull X-ray revealed an increased anteroposterior diameter, consistent with the cranial abnormalities associated with Apert syndrome. Further imaging of the hands and feet confirmed the pathognomonic syndactyly characteristic of the condition. The patient successfully underwent a series of surgeries to release the syndactyly in both his right and left hands. These surgical interventions have significantly improved the functionality of his hands. **Conclusions:** There is a paucity of information about Apert syndrome in Africa. Therefore, to strengthen advocacy for this condition in Africa, more cases should be reported.

Keywords: *Apert syndrome, Syndactyly, Craniosynostosis, Acrocephalosyndactyly,*

6. Abeid, M., Cuthbert, G., Likindikoki, S., *et al*… (2025). Prevalence and determinants of maternal psychological distress: A hospital-based cross-sectional study among pregnant women attending antenatal care in Dar-es-salaam, Tanzania. *Internal Medicine (East Africa)*. Doi: 10.1371/journal.pmen.0000315

Abstract

Pregnancy is a period of great transition in women, marked by various physiological, emotional, and social adjustment that can increase a woman's vulnerability to psychological distress during this critical period. Despite its potential impact on maternal and fetal health, maternal psychological distress remains underexplored in Tanzania, with limited published data on its burden. This study aimed to assess the prevalence and associated factors of maternal psychological distress among pregnant women receiving antenatal care at the Muhimbili National Hospital in Dar-es-Salaam. A hospital-based cross-sectional study was conducted with 287 pregnant women attending antenatal care (ANC) at Muhimbili National Hospital. A probability sampling method was used to select study participants via a simple random sampling technique through a lottery method. The Oslo Social Support Scale (OSSS-3) was employed to assess perceived social support, while the WHO Multi-Country Study on Women's Health and Domestic Violence against Women tool was used to measure intimate partner violence (IPV). Maternal psychological distress was assessed using the Kessler Psychological Distress Scale (K10). Data were analyzed using Poisson regression with robust variance to estimate crude and adjusted prevalence ratios to determine factors associated with maternal psychological distress, with statistical significance set at $p < 0.05$ and a 95% confidence interval. The mean age of participants was 30.87 (SD ± 4.3). The prevalence of maternal psychological distress was found to be 32.1%. Pregnant women aged 18–24 years had a significantly higher prevalence of psychological distress compared to those aged 25 years and above (aPR = 1.64, 95% CI: 1.10–2.45, p = 0.016).Women with perceived poor social support (aPR = 0.458, 95% CI: 0.321–0.652, p < 0.001) and moderate social support (aPR = 0.325, 95% CI: 0.178–0.593, p < 0.001) were also strongly associated with higher prevalence of psychological distress compared to those with good support. The findings revealed that maternal psychological distress is prevalent among pregnant women in this setting, highlighting the need to integrate early mental health screening and psychosocial support into ANC

7. Abeid, M., Mbekenga, C., Jusabani, A.M., *et al*… (2025). "It's the Time They Take to Give Feedback; it has Become a Problem" Exploring Barriers and Facilitators for Research Supervision in Postgraduate Medical Education in Tanzania. A Qualitative Study. *Advances in Medical Education and Practice*. Doi:10.2147/AMEP.S512498

Abstract

Background: Research supervision is a multifaceted task that combines academic knowledge with managing interpersonal relationships. Postgraduate trainees often receive inadequate supervision due to their supervisors' demanding schedules and limited supervision competencies. Most supervisors, especially in low-resource settings, lack formal training in supervision and thus rely on personal experiences to fulfil this role. Poor supervision contributes to high dropout rates and subpar research output in many universities. We aimed to explore the barriers and facilitators for

research supervision in postgraduate medical education in Tanzania. **Methods:** We adopted an exploratory qualitative case study and conducted key informant interviews with three purposively selected faculty members in leadership and four focus group discussions with 14 postgraduate trainees and 10 faculty members. Topic guides focusing on experiences, challenges, and needs were used for data collection. The data were audio-recorded and transcribed verbatim. A framework matrix was used to summarize and analyze data using an Excel workbook. An inductive qualitative data analysis approach was employed using thematic analysis as described by Braun and Clarke. **Results:** Two main thematic areas emerged from the analysis: Barriers and facilitators for research supervision in postgraduate medical education. Difficulty balancing workload, delays in feedback, limited access to some resources, funding constraints, and limited research skills emerged as key barriers. Participants recognised the role of a well-equipped library in facilitating the supervision process, and trainees appreciated flexibility from their supervisors. **Conclusion:** Addressing the identified barriers is crucial to enhancing the supervisor-trainee relationship and overall dissertation outcomes. Ensuring protected time for research and strengthening faculty research and supervision skills through targeted training is important to ensure high-quality research output.

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8. Abeid, S.M., Iseselo, M.K., Ndile, M.L., *et. al.*... (2025). Knowledge, attitude, and practice of nurses regarding enteral feeding for patients admitted to intensive care units of National Referral Hospitals in Dar es Salaam, Tanzania: a cross-sectional study. *International Journal of Africa Nursing Sciences*, Vol. 23. Doi: 10.1016/j.ijans.2025.100920.

Abstract

Background: Enteral feeding is crucial for critically ill patients, delivering a balanced mix of carbohydrates, proteins, fats, vitamins, and minerals. Nurses play the role of ensuring that patients admitted to the Intensive Care Unit (ICUs) obtain nutrients as required. This study investigated nurses' knowledge, attitudes, and practices on enteral feeding for critically ill patients admitted to the ICUs of the National Referral Hospitals in Dar es Salaam, Tanzania. **Methods:** A cross-sectional study involving 122 nurses selected using simple random sampling was conducted. Data were collected using questionnaires and analysed using SPSS version 27. All independent variables with $p \leq 0.2$ were included in the multivariable logistic model. Independent variables with $p < 0.05$ at a 95 % CI were considered statistically significant. **Results:** A total of 122 nurses between 25 and 35 years, with a mean age of 34.61 years and a standard deviation (SD) of ± 6.367, were recruited. About half, 49.2 % (n = 60), had a bachelor's degree. The study highlighted that 54.1 % (n = 56) had low knowledge, 55.75 % (n = 68) had positive attitudes, and 79.5 % (n = 97) were competent to practice enteral feeding. Training for enteral feeding was significantly associated with knowledge (AOR = 0.388, 95 % CI: 0.17-0.88). Also, the working position was significantly associated with a positive attitude (AOR = 15.46, 95 % CI: 1.98–120.7). Age and marital status were significantly associated with practices of enteral feeding (AOR = 0.13, 95 % CI: 0.01–0.98) and (AOR = 0.352, 95 % CI: 0.14-0.90), respectively. **Conclusion:** Despite positive attitudes and competence towards enteral feeding, most nurses had low knowledge about enteral feeding. Implementing on-the-job training may improve the quality of enteral feeding care

for patients in ICUs. Future research should focus on the qualitative experience of nurses in enteral feeding practice in similar settings.

Keywords: *Nurses, Dar es Salaam, Intensive care unit, Enteral feeding, Enteral nutrition, Knowledge, Practices, Attitudes, Tanzania*.

9. Abraham, Z.S., Rweyemamu, A., Kahinga, A.A. et al… (2025). Otorhinological disorders among pregnant women attending the obstetric clinic at Benjamin Mkapa Hospital, Tanzania. Nigerian Medical Journal: *Journal of the Nigeria Medical Association*, Vol. 65(6). Doi: 10.60787/nmj-v65i6.415

Abstract

Background: Pregnancy leads to physiological changes primarily driven by hormones like oestrogen and progesterone. Such changes are multi-systemic in nature, including involvement of the ear, nose, and throat. Such changes impair the quality of life of pregnant women and thus require prompt intervention during pregnancy. This study aimed to determine otorhinological disorders among pregnant women attending the obstetric clinic at Benjamin Mkapa Hospital. **Methodology:** A hospital-based descriptive cross-sectional study was conducted at Benjamin Mkapa Hospital from June to August 2023. A total of 246 pregnant women were recruited after consenting, where data on their age, gestational age, and otological and rhinological disorders were obtained. Otoscopic and rhinoscopic examinations were done and recorded in the data collection sheet. Data was analysed using the Statistical Package for Social Sciences (SPSS) version 23. A p-value<0.05 was statistically significant. **Results:** This study recruited 246 pregnant women, with the majority, 135(52.8%), in the 3rd trimester. Pertaining to otological disorders manifested by pregnant women, the majority, 39(15.9%) presented with hearing loss/reduced hearing ability, and conductive hearing loss was the most common type, 19(48.7%). Regarding rhinological disorders, 47(19.1%) pregnant women had allergic rhinitis, and most of them presented with nasal obstruction 41(87.2%), nasal bleeding 12(25.5%) and pale pinkish inferior turbinate,3(6.4%). Eighty (32.7%) pregnant women had olfactory disturbance, whereby most of them had a reduced sense of smell 41(51.3%). The association between otorhinological disorders and gestational age was significant for only allergic rhinitis and olfactory disturbance (p-value<0.05). **Conclusion:** The study concludes that otorhinological disorders are common among pregnant women, with a significant number experiencing hearing loss, allergic rhinitis, and olfactory disturbances. Specifically, allergic rhinitis and olfactory disturbances are significantly associated with the trimesters of pregnancy, while other disorders like hearing loss, Bell's palsy, otitis externa, and sinusitis do not show a significant association with the pregnancy trimesters. This highlights the need for prompt intervention to manage these conditions and improve the quality of life for pregnant women.

10. Abubakary, S.M., Demirel, A., Sarı, Ş. (2025). Evaluation of the effects of different types of finishing and polishing protocols on the surface roughness of restorative materials. *European Annals of Dental Sciences*, Vol. 52(3). Doi: 10.52037/eads.2025.0020.

Abstract

Purpose: This study aimed to evaluate the effects of different types of finishing and/or polishing protocols on the surface roughness of two different restorative materials that are frequently preferred in pediatric dentistry. **Materials and Methods:** Compomer (DyractXP)(n=20) and glass hybrid restorative (Equia Forte HT) material discs (n=20) were prepared using metal molds, and initial surface roughness values (Ra) were measured and recorded with a profilometer. Each restorative material was subdivided into 4 groups (n=5) containing different finishing and/or polishing protocols for each restorative material group (Sof-Lex Disc, Sof-Lex Disc Rubber Bur, Tungsten Carbide Bur, and Tungsten Carbide Bur+Rubber Bur). After finishing & polishing procedures, final surface roughness measurements were performed and recorded. Kruskal-Wallis H and Wilcoxon Signed-Rank tests were used to analyze the data. The statistical significance value was 0.05. **Results:** According to analyses performed considering the alteration (ΔRa) between initial and final surface roughness values, no statistically significant difference was found in terms of ΔRa between the two restorative materials and their subgroups (p=0.055). Also, final roughness values of compomer samples that were subjected to Tungsten Carbide Bur and Tungsten Carbide Bur+Rubber Bur were found to be significantly higher than initial roughness (p=0.043 and p=0.043, respectively). **Conclusions:** It was concluded that finishing and polishing protocols caused similar roughness changes on compomer and glass hybrid restorative material surfaces. However, it was also concluded that the compomer surface finished with Tungsten Carbide burs was rougher than the initial values.

Keywords: *Compomer; Glasshybridrestorative; Surface roughness.*

11. Abu-Zaid, M.H., Migowa, A.N., Kassa, H.L., *et al*... (2025). African guidelines for diagnosis and management of polyarticular juvenile idiopathic arthritis: PAFLAR initiative. *Pediatric Rheumatology*, Vol. *23*(1). Doi: 10.1186/s12969-025-01076-5

Abstract

Background: Juvenile idiopathic arthritis (JIA) is the most common rheumatologic disease of childhood. The Existing guidelines for polyarticular JIA are typically based on data from non-African populations and may not fully address the unique challenges faced in African settings. We aimed to produce updated African guidelines for the diagnosis and treatment of children and adolescents with polyarticular juvenile idiopathic arthritis (poly-JIA). **Methods:** This study was conducted with the aim of reaching a consensus among African experts on the diagnosis and treatment of poly-JIA using the Delphi technique. The first scientific committee identified a total of 15 key clinical questions according to the PICO (Patient/Population, Intervention, Comparison, Outcome) approach. A systematic review of the evidence-based literature was conducted for this work. The core steering group identified researchers and clinicians with expertise in pediatric rheumatology. A Delphi process was used to reach consensus. **Results:** An online questionnaire

was sent to the expert panel that participated in the survey (100% response rate). A total of 15 recommendation points were identified, divided into two parts: five recommendations for diagnosis and ten recommendations for management. The percentage of those who agreed with the recommendations (fourth and fifth place) ranged from 80 to 100%. All 15 clinical recommendation statements that the scientific committee had identified had been agreed upon in wording (i.e., 75% of respondents agreed or strongly agreed). **Conclusions:** We successfully developed guidelines for children with polyarticular JIA, taking into consideration the African specific nature of limited resources and low income, also on the same time incorporating newly released data and using a treat to target approach.

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12. Adam, J., Luoga, P., Mtawa, A., *et al*… (2025). Prevalence and associated factors of overweight and obesity among adult women in Tanzania from the 2022 Tanzania Demographic and Health Survey. *Scientific Reports*, Vol. 15(1). Doi: 10.1038/s41598-025-11141

Abstract

In Tanzania, the prevalence of overweight and obesity among women is reported to have increased over the past decade. However, there is a paucity of empirical studies that have documented the national prevalence and the factors associated with the burden among women aged 20-49. Therefore, this study intended to fill the gap. Secondary data analysis was conducted on data from the 5,355 Tanzania Demographic and Health Survey. The weighted sample included in this study was 16,716 women aged 20-49 years. Data analysis was performed using Stata 18.0 software. The strength of the association was assessed using the adjusted odds ratio (aOR) along with its corresponding 95% confidence interval (CI). The overall prevalence of overweight and obesity among adult women aged 20-49 years in Tanzania was 36% (95% CI 33.6, 38.0), whereby 22% of women were overweight, while 14% were obese. The results revealed that factors associated with overweight and obesity among women included being aged 40-49 years (aOR = 3.84, 95% CI 3.11, 4.74; $p < 0.001$), residing in urban areas (aOR = 1.43, 95% CI 1.13, 1.80; $p = 0.003$), having secondary education and above (aOR = 1.69, 95% CI 1.26, 2.26; $p < 0.001$),belonging to rich quintile (aOR = 2.06, 95% CI 1.53, 2.77; $p < 0.001$), using unhealthy foods (aOR = 1.25, 95% CI 1.01, 1.56; $p = 0.044$), smoking (aOR = 2.90, 95% CI 1.13, 7.45; $p = 0.027$) and watching television at least once a week (aOR = 1.56, 95% CI 1.25, 1.94; $p < 0.001$). The Ministry of Health and other health stakeholders should design programs to combat overweight and obesity, targeting older women by incorporating health topics into the educational curriculum in Tanzania.

Keywords *Overweight, Obesity, TDHS-MIS, Women, Tanzani*

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13. Adam, J., Luoga, P., Nyamhanga, T., (2025). Prevalence and determinants of malaria among children aged 6–59 months in Tanzania: a nationwide cross-sectional study. *Malaria Journal*, Vol. 24(1). Doi:10.1186/s12936-025-05409-3

Abstract

Background: Malaria is a leading cause of morbidity and mortality, especially in children under age 5 years in Tanzania. It is more often recognized as the most serious health problem in the community by women and men in Tanzania. The objective of the study was to determine the prevalence and the determinants of malaria among children aged 6–59 months in Tanzania. **Methods:** Secondary data analysis was conducted on data from 2022 Tanzanian Demographic and Health Survey and Malaria Indicator Survey. The weighted sample included in this study was 4,923 children aged 6–59 months, who underwent malaria rapid diagnostic test. Data analysis was performed using Stata 18.0 software. The strength of the association was assessed using the adjusted odds ratio (aOR) along with its corresponding 95% confidence interval (CI). **Results:** The prevalence of malaria among children aged 6–59 months was 8% (95% CI 6.2, 9.5). The percentage of children with malaria was highest in Tabora (23%) and below 1% among children in Dodoma, Arusha, Kilimanjaro, Singida, Songwe, and the Zanzibar regions. The study found that children aged 24–59 months (aOR = 1.71, 95% CI 1.33, 2.21), children residing in rural areas (aOR = 6.92, 95% CI 2.19, 8.83), children from lower economic status (aOR = 3.08, 95% CI 1.22–7.83), and children who never slept under an insecticide-treated net (ITN) (aOR = 2.73, 95% CI 1.51–4.91) were significantly associated with malaria among children aged 6–59 months. **Conclusion:** The study revealed a malaria prevalence of 8% among children aged 6–59 months in Tanzania, with the highest percentage observed in Tabora. This prevalence was associated with older age, residence in rural areas, lower economic status, and lack of access to insecticide-treated nets (ITNs). These results underscore the need for targeted malaria prevention strategies, particularly in rural areas and among economically disadvantaged populations. Enhancing access to ITNs and promoting their use, along with broader health education initiatives, could significantly reduce malaria incidence in this vulnerable age group.

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14. Admase, A., Cooney, E.E., Atkins, K., *et al*… (2025). Navigating stigma: a qualitative study of barriers to opioid treatment engagement in Tanzania. *Substance Abuse Treatment, Prevention, and Policy*, Vol. 20(1). Doi.10.1186/s13011-025-00660-y.

Abstract

Background: Stigma related to drug use is a well-documented barrier to engaging and remaining on medication for opioid use disorder (MOUD), yet little is known about how stigma operates across multiple social and institutional settings in low-resource contexts. **Methods:** This qualitative study draws on 40 in-depth interviews with current and former MOUD clients and four focus groups with 35 current clients at an opioid treatment clinic in Dar es Salaam, Tanzania. Transcripts were thematically analyzed to explore how stigma influenced MOUD adherence and retention. **Results:** Five themes emerged: stigma encountered while using public transportation; employment-related stigma; lack of family support due to misinformation; institutional stigma within the treatment setting; and stigma management strategies, including altering appearance and distancing from peers. Gendered expectations intensified stigma for women, while assumptions of untrustworthiness shaped client interactions across settings. These experiences posed significant barriers to consistent treatment engagement. **Conclusions:** To support MOUD retention, programs should integrate stigma reduction through expanded family engagement, more flexible clinic

policies, and client-informed approaches. Public education efforts are also critical to addressing widespread misconceptions about MOUD and people who use drugs.

15. Akan, G., Adolf, I.C., Colak, A., *et al*… (2025). Thyroid hormone dynamics and DIO2 variants in schizophrenia: exploring genetic links to neuroendocrine imbalance. *Journal of Cellular and Molecular Medicine,* Vol. 29(13). Doi:10.1111/jcmm.

Abstract

Introduction: Thyroid hormone modulates multiple neurotransmitter systems, including dopaminergic, serotonergic, glutamatergic, and GABAergic pathways, which are implicated in schizophrenia (SCH) pathophysiology. The Type II deiodinase (DIO2) enzyme plays a critical role in thyroid metabolism, converting thyroxine (T4) into the biologically active triiodothyronine (T3). This study aimed to investigate the potential association between DIO2 gene polymorphisms, Thr92Ala and ORFa-Gly3Asp, with serum levels of free triiodothyronine (fT3), free thyroxine (fT4), and thyroid-stimulating hormone (TSH) in SCH susceptibility and symptomatology. The cohort included 582 unrelated patients diagnosed with SCH and 603 healthy controls. Genotyping of Thr92Ala and ORFa-Gly3Asp single-nucleotide polymorphisms (SNPs) of the DIO2 gene was conducted along with serum measurements of TSH, fT4, and fT3 levels. The distributions of the Thr92Ala and ORFa-Gly3Asp genotypes differed significantly between the SCH group and the controls ($p < 0.001$). Furthermore, patients with SCH exhibited significantly lower levels of fT3 ($p < 0.001$) and TSH ($p < 0.001$) compared with controls. Notably, the Thr92Ala genotypes were significantly associated with altered fT3 and TSH levels in SCH patients ($p < 0.05$, respectively). This study identified a significant association between DIO2 polymorphisms and decreased levels of fT3 and TSH in Turkish patients with SCH. Given the impact of thyroid hormones on neurotransmitter systems involved in SCH, these results highlight the potential for thyroid hormone modulation as a therapeutic avenue. Further research could lead to more personalised treatment strategies, particularly for patients with genetic predispositions to altered thyroid hormone metabolism, improving clinical outcomes and offering new approaches to managing symptoms in schizophrenia.

16. Akyoo, W.O., Mosha, I. H., Mpembeni, R.M, *et al.*.. (2025). Hypothetical Preferences and Concerns for Long-Acting Injectable HIV PrEP Use Among Female Barmaids in Ubungo, Dar Es Salaam, Tanzania. *HIV/AIDS-Research and Palliative Care*, 251-264. Doi.org/10.2147/hiv. s523674.

Abstract

Background: Oral HIV pre-exposure prophylaxis (PrEP) has been introduced globally, but women in sub-Saharan Africa frequently experience challenges in uptake and adherence. Female barmaids are at HIV risk due to transactional sex. However, uptake and adherence to oral PrEP pills is poor. Long-acting injectable (LAI) PrEP has the potential to increase prevention by improving adherence. Nevertheless, LAI PrEP is yet to be initiated in Tanzania. We explored preferences and concerns about LAI PrEP use among female barmaids in Ubungo municipality.

Methods: We conducted in-depth interviews with 17 purposefully selected female barmaids. Interviews were conducted using a guide with semi-structured questions. We adopted an inductive approach for analyzing data. **Findings:** The majority of PrEP non-users expressed no preference for any form of PrEP, while oral PrEP-users preferred LAI PrEP. Overall, LAI PrEP was preferred due to its discretion, fewer side effects, prolonged prevention, and reduced fatigue compared to oral pill PrEP with concerns about large pill size, side effects, and the burden of daily use. Most interviewees indicated a three-month PrEP injection preference, though some preferred a monthly PrEP injection for effective monitoring and control of potential side effects. Regarding the delivery model, the healthcare facility was mostly preferred for timely services, convenience, more privacy, and reduced stigma. Community spots were preferred for convenience and friendlier services from providers. The majority reported no major concerns about using LAI PrEP, though a few expressed concerns about its trial phase, potential links to cancer, risky sexual behaviours, and side effects such as fatigue and dizziness. **Conclusion:** The majority of the interviewees expressed a strong interest in LAI PrEP and reported fewer concerns, emphasizing more convenience and discretion. Our findings suggest that since LAI can address challenges of adherence associated with daily PrEP pills, it is important to introduce it to expand HIV prevention options for barmaids and other women at risk of HIV in Tanzania.

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17. Akyoo, W.O., Mosha, I.H., Jahn, A., *et al*... (2025). "Any time because I am ready": Willingness to use long-acting injectable HIV PrEP among female barmaids in Dar es Salaam, Tanzania. *Frontiers in Public Health*, Vol. 13. Doi:10.3389/fpubh.2025.1511801

Abstract

Background: Human immunodeficiency virus (HIV) is still a major global public health problem. Sub-Saharan Africa remains the most severely affected, accounting for 69% of the people living with HIV worldwide. Currently, Pre-Exposure Prophylaxis [PrEP] pills are offered but are highly affected by non-adherence. Long-acting injectable PrEP has the potential to improve adherence. **Objective:** This study aimed to explore awareness and willingness to use long-acting injectable HIV pre-exposure prophylaxis among users and non-PrEP user female barmaids in Ubungo municipality in Dar es Salaam, Tanzania. **Methods:** This phenomenological study used in-depth interviews to collect data. A total of 17 study participants were purposively selected. Audio-recorded interviews were transcribed verbatim and translated into English. A thematic approach was used to identify patterns in the data. Key themes were coded using NVivo14 and then summarized into key findings. **Findings:** The findings revealed that participants who were PrEP pill users and non-users were aware of PrEP pills. Few of the PrEP pill users were aware of the long-acting injectable PrEP. The majority of both users and non-users of PrEP pills were willing to use the long-acting injectable PrEP. A few PrEP non-users expressed fear for PrEP, citing safety, and insisted on continuous condom use. **Conclusion:** The majority of participants are aware of and willing to use long-acting injectable PrEP when made available. The initiation of HIV long-acting injectable PrEP has the potential to increase protection options among female barmaids who are a population at risk of HIV infection.

18. Al-Azzawy, S.M., McEvoy, J.W., Johansson, I., *et al*…. (2025). Global detection and management of dysglycaemic patients with coronary artery disease results from the INTERASPIRE survey from 14 countries across six WHO regions. *Cardiovascular Diabetology*, Vol. 24(1), 327. Doi:10.1186/s12933-025-02878-3

Abstract

Objective: Dysglycaemia, defined as type 2 diabetes mellitus (T2DM) or impaired glucose tolerance (IGT), increases the cardiovascular risk and prognosis. INTERASPIRE performed in 14 countries across 6 WHO regions evaluated guideline adherence and management of patients with coronary artery disease (CAD) and dysglycaemia. **Methods:** A total of 4,548 CAD patients (18–80 years) were interviewed 6 months–2 years after hospital admission. All without diabetes were eligible for an oral glucose test (OGTT). **Results:** Overall, 1990 (44%) had known T2DM. The OGTT revealed that 808 (40%) had previously unknown dysglycaemia (T2DM 12% and IGT 28%). Two thirds of all dysglycaemic patients were obese. A similar proportion reported low physical activity and only one third received dietary advice. Only half of dysglycemic patients were prescribed all guideline recommended cardioprotective drugs. A majority did not reach recommended blood pressure, lipids or HbA1c targets. Only 16% had attended a diabetes education program. **Conclusions:** The INTERASPIRE study shows that screening for glucose perturbations in coronary patients is inadequate, achievement of lifestyle recommendations suboptimal and pharmacological management insufficient resulting in a poor risk factor control. Patients with coronary disease, especially those with glucose perturbations require professional support to achieve healthier lifestyles, and prescription of all cardioprotective medications to achieve guideline targets.

19. Alexandre, A.M., Lori, J.M., Mtaturu, G.F., *et al*… (2025). Adult Wilms Tumor with Inferior Vena Cava Thrombus on an Incomplete Duplex Collecting System Ureter Fissus Proximalis Managed at a Tertiary Hospital in Tanzania: A Case Report and Literature Review. *Clinical Case Reports*, Vol. 13(1). Doi:10.1002/ccr3.70136

Abstract

Background: Wilms' tumor (WT), also known as nephroblastoma, is a malignant embryonal kidney tumor composed of embryonic cells and is the most prevalent tumor among children, but isolated cases occur infrequently in the adult population. Adult WT is defined according to the criteria of Kilton, Matthews, and Cohen, which comprise an age above 15 years and histological patterns characteristic of WT. We report a case of an adult WT with venous thrombus on an incomplete duplex collecting system. To the best of our knowledge, this is the first case of adult WT with such a presentation. A 28-year-old female patient presented to our department with a 4-month history of right flank pain and flank mass and was diagnosed by abdominal contrasted CT to have a right renal tumor with tumor thrombi in the renal vein and the inferior vena cava. The CT scan also revealed a bilateral duplex collecting system with a partial (ureter fissus proximalis) on

the tumor side and a complete duplex system on the contralateral side. Right radical nephrectomy with complete tumor thrombectomy via venacavotomy was performed successfully. Histopathological examination of the specimen revealed a triphasic nephroblastoma with immunohistochemical confirmation. Postoperatively, adjuvant chemotherapy was initiated. The increasing incidence of non-syndromic WT cases associated with duplex collecting systems suggests a potential shared pathogenesis, necessitating further research.

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20. Alimohamed, M.Z., Kiula, A., Fundikira, L., *et. al*… (2025). Systemic barriers and opportunities for equity in early implementation of genetic testing and counseling for cardiomyopathies in Tanzania. *Communications Medicine*. Doi:10.1038/s43856-025-01244-4.

Abstract

Cardiomyopathies, particularly, dilated cardiomyopathy (DCM) and hypertrophic cardiomyopathy (HCM) are significant and growing public health concerns in low resource settings, particularly Africa. This growing burden stems from undiagnosed genetic causes, rising hypertension and infectious diseases, and limited access to diagnostic and specialist cardiac care. However, the epidemiology of these conditions remains poorly defined. In Europe and North America, genetic testing has proven to be an important tool for early diagnosis for these conditions. Its use can be extended to risk assessment, personalized management, and increased understanding of disease mechanisms. However, the availability and implementation of genetic testing in Tanzania are limited, hindering its potential to improve patient outcomes. This Perspective evaluates the current epidemiology of cardiomyopathies in Tanzania, to provide a broader view on the underlying genetic factors, systemic barriers to implementing genetic testing and counseling, and proposes actionable solutions to overcome existing challenges. While similar needs have been recognized across Africa, this Perspective emphasizes how context-specific framing in Tanzania, grounded in real-world clinical and health system features, remains essential to catalyze local implementation and policy reform.

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21. Amani, A., Lilian, M., Nathanael, S., *et al*… *(2025).* Understanding the Barriers to Task Sharing in Caesarean Section Delivery by Assistant Medical Officers. *Tanzania Medical Journal*, Vol. 36 (2). Doi:10.4314/n25j9p07

Abstract

Background: Shortage of skilled human resources for health necessitated task sharing in developing countries. Demand for advanced clinical work in Tanzania necessitated training of Assistant Medical Officers (AMOs) cadre which fitted between Clinical Officer (CO) and Medical Doctors (MD) responsibilities. Practically, AMO executed responsibilities intended primarily to MDs at district health services including performance of Caesarean Section (CS). While their work is significant, scholars and practitioners raised concern on AMO performance of CS. This paper aimed to analyse barriers to implementing task sharing in CS delivery by practising AMOs and

those in managerial positions. **Methods:** An explorative case study design was carried out in four different zones to include one district in each of selected zones. The districts studied included Handeni, Kasulu, Kilombero, and Masasi. In-depth interview guide exploring barriers to implementing task sharing in CS was used to interview 18 AMOs in clinical and managerial roles. A Hybrid thematic approach was used to analyse collected data. **Findings:** Five themes emerged illustrating barriers to task sharing in CS by AMO. These included unstructured internship programme, unorganized licensing system, shortage of equipment and medical supplies, weak supervision of AMOs together with other cadres involved in task sharing and limited benefits after graduation. **Conclusion:** The findings of this study underscore the fact that barriers limiting implementation of task sharing in CS delivery by AMOs may have potential to negatively influence the performance of this cadre. A comprehensive approach aiming to improve internship, professional regulation, mentorship and statutory benefits may provide conducive environment for AMOs to perform better in task sharing teams. Further, improvement in functional equipment and medical supplies in health facilities create enabling environment for AMOs to perform CS as part of task sharing.

Keywords: *Barriers of implementation, AMO, Task sharing, Caesarean section, Health workforce, Health services.*

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22. Ambikile, J.S., Mbao, E., Mawi, N.E., *et. al*… (2025). Prevalence and Correlates of Physical Gender-Based Violence Among Female Nursing Students: An Analytical Cross-Sectional Study in Higher Educational Institutions. INQUIRY: *The Journal of Health Care Organization, Provision, and Financing*, Vol. 62. Doi:10.1177/00469580251399101.

Abstract

Gender-based violence (GBV) is a global health concern that affects individuals across various settings, including higher educational institutions (HEIs), where female students are particularly vulnerable. In Tanzania, GBV within HEIs remains under-researched, despite its potential impact on students' well-being and academic performance. As part of a broader mixed-methods investigation on GBV among female students, this study specifically examined the reported prevalence and correlates of physical GBV in two Tanzanian higher education institutions, an often-overlooked area. We employed an analytical cross-sectional study design that included 296 female nursing students from Muhimbili University of Health and Allied Sciences (MUHAS) and Hubert Kairuki Memorial University (HKMU) in Dar es Salaam. Participants were recruited through total population sampling and data collected at the end of the academic years, from 1st August to 8th September in 2023, and 5th August to 20th December in 2024. Physical GBV included being threatened with harm, pushed, slapped, grabbed, hair pulled, hit with objects or fists, kicked, or subjected to suffocation, strangulation, stabbing, or shooting attempts. Data were collected using a self-administered questionnaire and analyzed using SPSS version 25, with bivariate and multivariable logistic regression performed to assess the sociodemographic correlates of physical GBV. The reported prevalence of physical GBV since enrollment in the HEIs was 10.1%, with a significant proportion of survivors not reporting or taking legal actions. Attending MUHAS had a higher likelihood of reporting physical GBV (AOR = 2.935; 95% CI:

1.233–6.985; P < .015). No other sociodemographic variables demonstrated a statistically significant association with physical GBV. This study found that 10.1% of female nursing students in the two Tanzanian universities reported experiencing physical GBV, yet disclosure and reporting rates remained notably low, underscoring the need for strengthened awareness, support services, and institutional mechanisms to address GBV within higher education settings.

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23. Ambikile, J.S., Msengi, E.A., Chona, E.Z., *et al*… (2025). Coping strategies utilized by patients with cervical cancer: an explorative qualitative study at the Ocean Road Cancer Institute in Dar es Salaam, Tanzania. *BMC Women's Health,* Vol. 25(59). Doi:10.1186/s12905-024-03536-8.

Abstract

Background: Cervical cancer ranks as the fourth most prevalent cancer among women globally, particularly affecting socioeconomically disadvantaged populations such as those in Tanzania. Receiving a cervical cancer diagnosis induces considerable stress and elicits negative reactions. Coping mechanisms, ranging from adaptive to maladaptive, are employed to navigate this challenging condition and are influenced by factors such as race, socioeconomic status, and sociocultural background. Despite its significance, little is known about the coping strategies utilized by cervical cancer patients in Tanzania. **Methods:** By employing purposeful sampling, a qualitative descriptive study was conducted at the Ocean Road Cancer Institute in Dar es Salaam from December 2022 to January 2023, aiming to explore coping strategies adopted by cervical cancer patients. Thematic analysis was employed to analyse the gathered data. **Findings:** The key themes that emerged included problem-focused coping, emotion-focused coping, social support, religious coping, and escapism. **Conclusions:** Cervical cancer patients employ a diverse array of coping strategies to manage their condition. While many strategies observed were adaptive, some proved to be maladaptive, underscoring the importance of ongoing assessments to bolster adaptive coping mechanisms among this population.

Keywords: *Cervical cancer, Coping strategies, Coping mechanisms, Women.*

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24. Ambikile, J.S., Ngulupi, S.S., Massae, A.F. (2025). Factors associated with chronic kidney disease knowledge and preventive practices: An analytical cross-sectional study among patients with hypertension at Amana Regional Referral Hospital in Dar es Salaam, Tanzania. *Plos one,* Vol. 20(1). Doi: 10.1371/journal.pone.0317257

Abstract

Background: Globally, Chronic kidney Disease (CKD) has become a significant public health concern, with sub-Saharan Africa being among the populations experiencing the highest rates. Managing CKD poses a significant challenge due to its health complications and associated high cost of care. Hypertension is one of the leading causes of CKD, responsible for the decline in kidney function in patients. Knowledge and lifestyle modifications are pivotal to the prevention and progression of CKD. In Tanzania, little is known regarding CKD knowledge and preventive practices among patients with hypertension. Therefore, this study aimed to assess context-specific

factors associated with CKD knowledge and preventive practices among patients with hypertension at Amana Regional Referral Hospital in Dar es Salaam. **Methods:** An analytical cross-sectional study involving 184 patients was conducted at Amana Regional Referral Hospital. Patient were recruited at the outpatient hypertension clinic using simple random sampling in June and July 2022. Data analysis was conducted using IBM-SPSS Statistics version 25. Bivariate and multiple logistic regression analyses were performed to identify factors associated with knowledge and preventive practices related to CKD, with statistical significance set at a p-value < 0.05. **Results:** The median CKD knowledge score was 13 (IQR: 9–16). Of the 184 respondents, 104 (56.5%) demonstrated high CKD knowledge. None of the sociodemographic factors were significantly associated with CKD knowledge. The median score for CKD preventive practices was 9 (IQR: 8–9), and 111 respondents (60.3%) had good practices. High CKD knowledge was significantly associated with good CKD preventive practices (AOR: 1.98; 95% CI: 1.08, 3.62; p = 0.027). **Conclusion:** A significant proportion of hypertensive patients in this study exhibited both high CKD knowledge and good preventive practices. The positive correlation between CKD knowledge and improved preventive practices highlights the importance of educational interventions to further enhance CKD knowledge among patients with hypertension.

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25. Ambikile, J.S., Tarimo, E.A., Iseselo, M.K., *et al*… (2025). The experience of trial participation disclosure among sex workers in a phase IIb HIV vaccine trial: A qualitative study in urban Tanzania. *PLOS global public health*, Vol. 5(11). Doi: 10.1371/journal.pgph.0005511

Abstract

Globally, HIV vaccine clinical trials are conducted in the quest for an effective preventive vaccine. Volunteers' participation is vital to the success of these trials. However, disclosing involvement in a vaccine trial may have significant consequences, potentially affecting key aspects such as recruitment, retention, and overall engagement. This study aimed to explore the experiences of disclosure and non-disclosure of participation in a Phase IIb HIV Vaccine Trial among female sex workers in Dar es Salaam, Tanzania, and used a descriptive qualitative design. Fifteen in-depth interviews and four focus group discussions were conducted among volunteers who were participating in the HIV vaccine trial. Data analysis was done manually using the framework method. Three themes emerged: reasons for disclosure, reasons for non-disclosure, and consequences of disclosure. Reasons for disclosure were grouped into two categories: intended disclosure and unintended disclosure. Intended disclosure occurred to seek support for trial participation and to share information within trusted relationships. Unintended disclosure arose from circumstances related to trial participation. Reasons for non-disclosure had two categories: perceived lack of understanding about trial participation and concerns about inadequate support. Consequences of disclosure encompassed three categories: uncertainty about the vaccine's side effects, the perception of volunteers being infected with HIV, and disapproval of the vaccine trial. The findings reveal that volunteers experienced a complex interplay between disclosure and non-disclosure of their participation in the PrEPVacc trial. The key themes – reasons for disclosure, non-disclosure, and consequences of disclosure – underscore the importance of understanding the personal and social factors influencing these decisions. These insights highlight the need for

enhanced community education and support mechanisms to address concerns, mitigate misconceptions, and improve participation in HIV vaccine trials.

26. Ambikile, J.S., Tarimo, E.A., Iseselo, M.K., *et. al*… (2025). The experience of trial participation disclosure among sex workers in a phase IIb HIV vaccine trial: A qualitative study in urban Tanzania. *PLOS global public health*, Vol. 5(11). Doi: 10.1371/journal.pgph.0005511.

Abstract

Globally, HIV vaccine clinical trials are conducted in the quest for an effective preventive vaccine. Volunteers' participation is vital to the success of these trials. However, disclosing involvement in a vaccine trial may have significant consequences, potentially affecting key aspects such as recruitment, retention, and overall engagement. This study aimed to explore the experiences of disclosure and non-disclosure of participation in a Phase IIb HIV Vaccine Trial among female sex workers in Dar es Salaam, Tanzania, and used a descriptive qualitative design. Fifteen in-depth interviews and four focus group discussions were conducted among volunteers who were participating in the HIV vaccine trial. Data analysis was done manually using the framework method. Three themes emerged: reasons for disclosure, reasons for non-disclosure, and consequences of disclosure. Reasons for disclosure were grouped into two categories: intended disclosure and unintended disclosure. Intended disclosure occurred to seek support for trial participation and to share information within trusted relationships. Unintended disclosure arose from circumstancees related to trial participation. Reasons for non-disclosure had two categories: perceived lack of understanding about trial participation and concerns about inadequate support. Consequences of disclosure encompassed three categories: uncertainty about the vaccine's side effects, the perception of volunteers being infected with HIV, and disapproval of the vaccine trial. The findings reveal that volunteers experienced a complex interplay between disclosure and non-disclosure of their participation in the PrEPVacc trial. The key themes – reasons for disclosure, non-disclosure, and consequences of disclosure – underscore the importance of understanding the personal and social factors influencing these decisions. These insights highlight the need for enhanced community education and support mechanisms to address concerns, mitigate misconceptions, and improve participation in HIV vaccine trials.

27. Amon, L., Haule, S., Joseph, R. S., *et al*… (2025). Determinants of implementing patient-centred care in developing countries: a case study of Kahama Municipal Hospital in Tanzania. *BMJ Open.* Vol.15(7). Doi:10.1136/bmjopen-2024-09147

Abstract

Background: Patient- centred care (PCC) is one of the six key attributes of healthcare quality. However, despite its significant contribution to improving healthcare quality, PCC is often poorly implemented. This study aimed to explore the determinants of effective PCC implementation among healthcare providers at Kahama Municipal Hospital in Tanzania. **Objective:** To explore the determinants influencing the effective implementation of PCC among healthcare providers at Kahama Municipal Hospital in Tanzania. Design A qualitative approach was used, with 21

healthcare providers recruited through purposive and convenience sampling methods. Data were collected through focus group discussions and key informant interviews, and content analysis was employed to analyse the data. Setting The study was conducted at Kahama Municipal Hospital, in the Kahama Municipal Council of the Shinyanga region, Tanzania, from February to June 2019. As a referral hospital, Kahama Municipal Hospital serves a vast catchment area, including rural and semiurban communities across more than eight regions in Tanzania's Lake and Western zones. **Results:** The study identified several factors related to healthcare professionals, including awareness of PCC, staff motivation, heavy workload, professional competencies and effective communication. Organisational- related determinants, such as the absence of ethical guidelines, a lack of a clear organisational culture and the absence of specific policies and guidelines on PCC, were also found to affect its effective implementation. **Conclusion:** PCC is recognised at Kahama Municipal Hospital, but key barriers hinder its implementation, including unclear policies, lack of a PCC- focused vision, staff shortages, excessive workloads, low motivation, limited practical exposure and communication issues. To improve PCC implementation, healthcare policymakers and hospital administrators should: (1) establish clear PCC policies, (2) integrate a patient- centred vision into leadership, (3) address workforce shortages, (4) provide targeted training on PCC and (5) boost staff motivation through recognition and career development. Implementing these measures will improve care quality and health outcomes. Further large- scale research is needed to assess PCC implementation across Tanzania and guide national policy.

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28. Amon, Y., Iseselo, M.K., Sumari, E. (2025). Prolonged length of hospital stays and its associated factors among patients admitted with heart failure: a cross-sectional study in Dar Es Salaam, Tanzania. *BMC Cardiovascular Disorders*, Vol. 25(1). Doi:10.1186/s12872-025-05333-z

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Abstarct

Background: Prolonged hospital stay (LOS) is a major problem among patients admitted with heart failure (HF). A heightened cost of patients' care, accompanied by a prolonged LOS, is associated with overutilization of the health facility resources, resulting in an increased health care budget in low-resource settings. Information on the factors influencing the LOS among patients admitted with HF in Tanzania is scarce. This study aimed to identify factors contributing to prolonged LOS among patients with HF. **Methods:** A cross-sectional study was conducted at the Jakaya Kikwete Cardiac Institute in Dar es Salaam, Tanzania, from May to June 2024. It included 327 participants recruited using simple random sampling. Data were collected through a self-administered questionnaire and analysed using SPSS version 27. Descriptive analysis was performed for the demographic and clinical characteristics to determine mean, standard deviation, frequency and percentages. Bivariate analysis was done to determine the association between the factors and the length of hospital stay. Furthermore, multivariable logistic regression for variables with $p \leq 0.2$ was performed to rule out the confounding factors. A p-value < 0.05 was used to determine statistical significance. **Results:** Among the 327 participants, 196 (59.9%) were female. The mean age of participants was 48.6 years with a standard deviation (SD) of ± 17.4 years. The mean length of stay was 11 days, with 167 (51.1%) staying 10 days or more (i.e. 3rd quartile in the population sample). Participants from rural areas were 2 times more likely to have longer hospital

stays compared to those from urban areas (AOR = 2.12, 95% CI: 1.317–3.424, $p = 0.002$). Participants with hypertensive heart disease (HHD) as a comorbidity with HF were 2.8 times more likely to have prolonged LOS compared to heart muscle disorders (HMD) (AOR = 2.805, 95% CI: 2.08–5.09, $p = 0.042$). In addition, participants with underweight were 2 times more likely to have a prolonged length of hospital stay compared to those with normal weight (AOR = 2.051, 95% CI: 1.006–3.439, $p = 0.007$). Furthermore, participants with treatment complications were 2.2 times more likely to have a prolonged LOS compared to those with no complications (AOR = 2.237, 95% CI: 1.05–4.79, $p = 0.038$). **Conclusion:** The findings show prolonged hospital stays for patients with HF and associated factors that need to be addressed. This underscores the need to adhere to the guidelines of the underlying conditions and comorbidities during treatments. Also, a close follow-up of nutrition status and developing strategies for those patients from rural areas may shorten the hospital stay.

29. Amos, R.M. (2025). A Rare CD30+ Follicular B-Cell Lymphoma in a Female Child with Pulmonary Tuberculosis (PTB): A Case Report. *Tanzania Medical Journal,* Vol. 36(2). Doi:10.4314/cyk7dj63

Abstract

Background: Follicular lymphoma (FL) occurs in Tanzania but its CD30+ subtype is undocumented yet. Targeted immunotherapy for CD30+ Hodgkin lymphoma (HL) is available and consequently, its immunoreactivity in some non-Hodgkin lymphoma (NHL) may imply additional therapeutic benefit. Concomitant tuberculosis (TB) is rare but may have similar presentation. **Case Summary:** A 13-year-old female with recurrent, progressive left cervical lymphadenopathy was initially biopsied at Kilimanjaro Christian Medical Center (KCMC), diagnosed as undifferentiated carcinoma and pulmonary tuberculosis (PTB) and referred to Muhimbili National Hospital (MNH) where CD30+ follicular lymphoma was diagnosed and transferred to Ocean Road Cancer Institute (ORCI). **Discussion:** This case, was associated with abundant CD45+, CD20+, CD30+ and CD3- neoplastic cells including Sputum positive PTB. **Conclusion and recommendation:** This CD30+ NHL is amenable to additional specific immunotherapy. Routine CD30 immunohistochemistry is recommended and concomitant TB be ruled-out.

Keywords: *Follicular lymphoma, CD30 positive, Immunotherapy, Pulmonary TB*

30. Amos, R.M., Hussein, M.H., Charles, A.M., *et al*… (2025). Comparison of Cytological and Histopathological Findings of Thyroid Lesions at Muhimbili National Hospital, Tanzania. *Tanzania Medical Journal,* Vol. 36(3). Doi:10.4314/cdjc0d89

Abstract

Background: Thyroid lesions are endemic in Tanzania but poorly documented. Fine needle aspiration cytology (FNAC) is a reliable, cheaper, quicker and easier diagnostic test compared to histopathology but a representative specimen and experience are pre-requisites. Histopathology is available at only a few tertiary health-care centres in Tanzania. Comparable thyroid cytological findings can obviate the need for histopathology where this is not available. **Methods:** This

hospital-based retrospective descriptive cross-sectional study was carried out to compare cytology and histopathology in thyroid lesions diagnosis. It included surgical in-patients while pre-operative FNAC was done prior at surgical outpatient (SOPD) clinics between May-2012 and February-2014. Convenience sampling of all patients who underwent FNAC and thyroidectomies with subsequent histopathological evaluation and the Bethesda System for Reporting Thyroid Cytopathology (TBSRTC-2017/18) were used. **Results:** A total of 124 patients were enrolled and age ranged from 12-77 years, mean 40.5±11.66 years, peak-age 31-40 years, and a male: female (M:F) ratio=1:7.3. Cytologically, the vast majority (80.6%, n=100/124) were benign, 11.3% (n=14/124) malignant and 8.1% (n=10/124) indeterminate. Comparatively, histopathology showed a similar (82.3%, n=102/124) proportion of benign lesions and a higher (17.7%, n=22/124) proportion of cancers. Furthermore, histopathologically, the commonest (38.1%, n=48/124) benign lesions were colloid goitre and follicular adenoma (19.4%, n=24/124). Nine cases negative for malignancy cytologically, were histologically confirmed as papillary (44.4%, n=4) and follicular carcinoma (55.6%, n=5). Most (92.9%, n=13/14) cases diagnosed as malignancies cytologically, were so confirmed histologically. One patient had papillary carcinoma by FNAC but histologically follicular adenoma. The sensitivity of FNAC was 59.1%, specificity 98.9%, positive predictive value (PPV) 92.9%, negative predictive value (NPV) 91% and accuracy was 91.2%. **Conclusion:** Thyroid lesions at Muhimbili National Hospital (MNH) are comparable to elsewhere. Although FNAC shows low sensitivity it is specific, and accurate as an initial diagnostic test for these lesions which is useful where histopathology is not available.

Keywords: *Thyroid Lesions, Cytology, Histology, Cancer, Diagnosis, Accuracy*

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31. Amour, A., Hashim, F., Said, F.H., *et al*… (2025). Sickle Cell Disease in the Islands of Zanzibar: Patients' Characteristics, Management, and Clinical Outcomes. *Genes*, Vol. 16(1). Doi:10.3390/genes16010047.

Abstract

Background: This study aimed to describe Sickle Cell Disease (SCD) phenotypes, sociodemographic characteristics, healthcare, and clinical outcomes of patients with SCD attending Mnazi Mmoja Hospital (MMH) in Zanzibar. **Methods:** Individuals who visited MMH between September 2021 and December 2022 and were known or suspected to have SCD were enrolled in the clinic. Sociodemographic characteristics and clinical features were documented, and laboratory tests were performed. A two-sample test of proportions was used to ascertain the significance of differences in the distribution of clinical outcomes between the follow-up visits. **Results:** A total of 724 patients with SCD were enrolled: 367 (50.7%) were male, and 357 (49.3%) were female. Most patients—713 (98.5%) in total—were homozygous (Hb SS), 9 (1.2%) had the Hb SC phenotype, and 2 (0.3%) had HbS β+ thalassemia. The majority of patients were aged 13 years and below—520 (71.8%) in total—and most did not have health insurance—582 (80.4%) in total. While all patients received folic acid, only a quarter received pneumococcal prophylaxis and hydroxyurea. Attendance at the third visit was associated with a reduced frequency of self-reported episodes of pain (24 patients [4.3%] vs. 11 patients [1.9%]). Conclusion: The population of patients with SCD in Zanzibar mostly comprised children who were Hb SS. Basic care services are

still suboptimal, although they are associated with better outcomes when present. Thorough evaluation of SCD prevalence in Zanzibar through newborn screening programs is warranted.

Keywords: *sickle cell disease; Zanzibar; clinical characteristics; management; outcomes*

32. Amour, M., Joseph, P., Ngowi, J., *et. al*… (2025). Detect early TB infection, evaluate contacts for TB (DETEC-TB)–a protocol for a prospective cohort study on active case finding for tuberculosis disease and tuberculosis infection source tracing. *BMC Infectious Diseases,* Vol. 25(1) Doi:10.1186/s12879-025-11797-3.

Abstract

Background: Tuberculosis (TB) is a leading cause of death from infectious disease, with 1.25 million deaths in 2023. Among the estimated 10.8 million people who developed TB in 2023, only 75% were diagnosed and reported to national programs and the World Health Organization (WHO). Tanzania has one of the highest burdens of TB in the world, with an estimated 29% of cases unreported. Innovative control strategies, including improved active case finding, are needed to close this gap. This study aims to determine the proportion of persons with TB disease among contacts of adolescents with newly-acquired TB infection and the cost-effectiveness of this strategy. **Methods:** This 5-year prospective cohort study will perform serial Interferon Gamma Release Assay (IGRA) T-SPOT.TB testing for TB infection among 1200 adolescent school children aged 13 to 15 years in Dar es Salaam, Tanzania. Participants with negative T-SPOT.TB test at baseline will repeat T-SPOT.TB testing every 4 months for 16 months to detect new TB infections. Participants will then be categorized into three groups based on T-SPOT.TB test results: prevalent TB infection (IGRA positive at baseline), incident TB infection (conversion from IGRA-negative to IGRA-positive at follow-up), or no TB infection (persistent IGRA-negative). Household and other close contacts of 100 adolescents (4 contacts each) selected from the three categories will be tested to detect TB disease source cases. Tests will include expectorated sputum for gene X-pert and chest radiography. Data will be analyzed using Stata version 16, with the chi-square test used to compare differences in proportions of TB disease cases among contacts in each category. Logistic regression analysis will be used to estimate the odds ratios for the probability of source cases of tuberculosis disease among close contacts. A multivariate logistic regression model will adjust for potential confounders. A micro-costing approach will be used to determine the cost-effectiveness of this strategy for identifying community transmission of TB. **Discussion:** The DETEC-TB study proposes a novel approach to active tuberculosis case finding and infection source tracing. Serial T-SPOT.TB testing of adolescents will detect prevalent and incident TB infections. Close contacts of these adolescents will be tested to identify cases of infectious TB disease that may have transmitted the infection.

Keywords: *IGRA, T-SPOT.TB test, Active case finding, Tuberculosis, Adolescents, Household, Contacts, Tanzania.*

33. Amuzu, E.X., Urio, F., Dogbe, E.E., *et al*… (2025). Clinical manifestations of sickle cell disease in Africa and its association with foetal haemoglobin parameters. *Communications Medicine,* Vol. *5*(1). Doi:10.1038/s43856-025-00954-z.

Abstract

Background: Prevalence of sickle cell disease (SCD) across African countries ranges between 1–3% and contributes up to 7–16% of under-five mortality. In order to bridge the gap in management and cognate research, the SickleInAfrica consortium was established in 2017 to facilitate collaboration among African nations in order to establish regionally relevant healthcare standards for SCD patients. This work utilized the SickleInAfrica platform to study the levels of HbF and F cells and their relationship with sickle cell disease clinical manifestations in Ghana, Nigeria and Tanzania. **Methods:** This study enrolled 290 individuals with SCD aged five years and above who were confirmed to be at steady state and were hydroxyurea naïve. Clinical history was obtained using an interviewer-administered questionnaire. Haematological parameters were determined by an automated haematology analyser, while quantification of HbF and F cells was implemented by high-performance liquid chromatography and flow cytometry, respectively. Age-adjusted logistic regression was employed to assess the association of HbF with the clinical manifestations. **Results:** The most reported complication of SCD, requiring management in a hospital setting is pain crises, ranging from 66–96% with the highest in Tanzania and lowest in Ghana. HbF and F cell parameters show significant association with transfusion rates, frequency of painful crises and episodes of febrile illness. **Conclusion:** This work highlights important differences and similarities across SCD populations in the three countries. This is important especially in development of interventions in the light of personalized medicine.

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34. Anab, I., Ahlam, N. (2025). ResearchThe East African Health Reseach Knowledge, Attitude, and Practice of Voluntary Blood Donation among Medical Doctors at Muhimbili University of Health and Allied Sciences. *Tanzania Medical Journal*, Vol. 36(4). Doi:10.4314/h4dw8c49

Abstract

Background: In sub-Saharan Africa, the demand for safe blood and blood products exceeds the available supply. Doctors have the potential to become a donor pool that provides regular supply of safe blood and play a positive role in promoting blood donation at the community level. **Broad objective:** This study aimed to determine the knowledge, attitude and practice of blood donation among medical doctors at Muhimbili University of Health and Allied Sciences (MUHAS). **Methodology:** A descriptive cross-sectional study was conducted from June 2022 to August 2022. The study was conducted at MUHAS, a public university in Dar es Salaam, Tanzania. Using multistage cluster sampling, 140 doctors were recruited. Data collection was done using a well-structured self-administered questionnaire; data on sociodemographic characteristics, knowledge, attitude, and blood donation practice was obtained. Knowledge was assessed using six questions, attitude using five questions, and blood donation practice using six questions. Descriptive statistics were generated using SPSS version 20. **Results:** The median age group of respondents was 30 – 39 years. The male-to-female ratio was 2:1. Most respondents had knowledge about the common blood groups (95%), knowledge of transfusion-transmitted Infections (TTIs) was varied i.e., HIV was known to be a TTI by 95%, HBV by 89.3%, HCV by 75%, Malaria by 40.7% and Syphilis by 56.4% and many respondents were not knowledgeable about the specifics of the donation process including the amount of blood drawn (40%) and the recommended frequency of donation (52.1%).

The calculated average of correct responses for knowledge of blood donation was 73.2%. Overall, the attitude towards blood donation was positive (95%), and about half of the study participants reported to have donated blood in their lifetime. However, only 2.9% were regular blood donors. Apart from the self-reported claim of being unfit to donate (24.3%), not being approached to donate was the second most common reason given by the non-donors (18.6%). **Conclusion:** Our study highlights a discrepancy between having good knowledge and positive attitude towards blood donation, and the actual practice of regular blood donation among medical doctors. **Recommendation:** We recommend directing efforts toward understanding of barriers to regular blood donation among doctors and developing strategies to increase donor retention.

Keywords: *Blood donation, Doctors, Knowledge, Attitude, Practice, Tanzania.*

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35. Anaeli, A., Kagaigai, A., Luoga, P., *et al*….(2025). The role of health insurance on healthcare utilisation among women in Tanzania: insights from the Tanzania Demographic and Health Survey 2022. *Archives of Public Health*, Vol. 83(176). Doi:10.1186/s13690-025-01623-2.

Abstract

Background: Globally, health insurance is viewed as a viable health financing option for improving access to healthcare. In Tanzania, as in other countries, it is actively promoted to enhance service accessibility. However, there are limited empirical studies on the association between having health insurance and women visiting health facilities. The available studies covered small areas and used a small sample size. This study aimed to determine the relationship between health insurance status and utilisation of healthcare among women aged 15–49 using the Tanzania Demographic and Health Survey (TDHS). **Methodology:** This study analysed secondary data of 15,254 women drawn from the 2022 (TDHS). The survey is conducted every five years by the National Bureau of Statistics. The dependent variable was healthcare utilisation status, and the key independent variable was the health insurance status of a woman. The analysis took into account the complex sampling design. The analysis involved descriptive analysis to get the frequency and percentage distribution of respondents. Bivariate analysis and multivariable logistic regression were conducted to assess the magnitude of association between dependent and independent variables. A cut-off points of p-value < 0.05 was used to determine the significant level of statistical significance. **Results:** The prevalence of healthcare utilisation among Tanzanian women was 53%. After controlling for other covariates, women who were covered by health insurance had 1.37 times higher odds of healthcare utilisation compared to those who were not covered by health insurance (AoR:1.37, 95% CI: 1.14, 1.65), women aged 25–34 years had 1.38 times higher odds of healthcare utilisation compared to those who were aged 15–24 years (AoR:1.38, 95% CI: 1.24, 1.54). Women who were in union had 2 times higher odds of healthcare utilisation compared to those who were not in union (AoR: 2.1, 95% CI: 1.88, 2.35). Women who were working had 1.71 times higher odds of utilising healthcare services compared to those who were not working (AoR: 1.71, 95% CI: 1.56, 1.88). Women who watched or listened to mass media at least once a week had 1.37 times higher the odds of healthcare utilisation compared to those who did not watch or listen to mass media at all (AoR:1.37, 95% CI: 1.2, 1.56). However, place of

residence was not a significant factor. **Conclusion:** The present study shows a statistically significant association between being insured and the utilisation of healthcare services among women aged 15–49 years. This indicates that insurance status helps women utilise healthcare services in Tanzania. The findings from this study also highlighted demographic factors including age, marital union, working, and use of mass media as important factors influencing utilisation of healthcare among women. It is imperative to educate the community on the importance of health insurance so that more women can enroll in health insurance schemes, including the improved Community Health Fund (iCHF), the National Health Insurance Fund (NHIF), and private health insurance schemes, thereby breaking financial barriers to healthcare utilisation.

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36. Anaeli, A., Massawe, N., Mwakafwila, F.J, *et al*... (2025). Barriers to the implementation of an improved Community Health Fund electronic claim process in primary healthcare services in Singida region of Tanzania: a qualitative inquiry. *BMJ Open*, Vol. *15*(6). Doi:10.1136/bmjopen-2024-090489

Abstract

Study objective: This study aimed to explore the barriers to the implementation of the improved Community Health Fund (iCHF) electronic-claim (e-claim) process in primary healthcare services in Tanzania. **Design:** A phenomenological study design using a qualitative approach. **Setting:** In-depth interviews were conducted to collect data from 19 participants from Mkalama and Iramba districts. **Participants:** The data were collected from the regional health managers, district health managers, information technology officers, facility in-charges and iCHF focal persons from dispensaries, health centres and hospitals. Thematic analysis was employed to analyse the data in this study. **Results:** This study identified several key barriers to the implementation of the iCHF e-claim process. The barriers include financial governance and oversight, institutional capacity for the iCHF e-claim process, staff negligence in complying with iCHF guidelines, resource availability, and logistical shortcomings for handling iCHF e-claim processes. **Conclusion:** The iCHF e-claim process is inadequately implemented and does not attract healthcare workers due to the observed challenges. There is a need for joint efforts to improve the implementation of the iCHF e-claim process involving stakeholders at all levels.

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37. Anatory, D., Mndeme, G.F., Makupa, A, *et al*... (2025). Stage at initial presentation, management, and factors associated with progression among primary open-angle glaucoma patients treated at a tertiary hospital in Tanzania. *Ophthalmology Research: An International Journal*, Vol. *20*(3). Doi:10.9734/or/2025/v20i3457

Abstract

Objective: To assess the stage of Primary Open Angle Glaucoma (POAG) at diagnosis, determine the proportion of patients experiencing disease progression, and identify factors influencing progression. **Methods:** In this retrospective cohort, 201 newly diagnosed POAG patients aged 18 years and older, each with a minimum of five Humphrey 24-2 SITA standard visual field tests (VFTs) taken at six-month intervals undergoing treatment were enrolled, for a total of 363 eyes. Disease severity was classified based on visual field mean deviation (MD) as mild (MD > -6 dB),

moderate (MD -6 to -12 dB), advanced (MD -12 to -20 dB), or severe (MD < -20 dB). The primary outcome was POAG progression defined as an annual VFI deterioration of ≤ -1% per year. Kaplan Meier survival analysis was used to estimate the probability of progression, while Cox regression analysis identified factors associated with disease progression. **Results:** At diagnosis, 228 eyes (62.8%) had mild to moderate POAG and 135(37.2%) had advanced to severe POAG. At an average of 6 years follow up, 140 eyes (38.6%) showed progression, with a mean VFI decline of -2.2% per year. 108 of 140 eyes (77.1%) progressed to advanced and severe stages. Uncontrolled elevated intraocular pressure strongly predicted disease progression ($p < 0.001$), and eyes with IOP above target values had a 4.3 times higher risk of progression. Other significant risks included severe disease stage, normal tension glaucoma, and myopia, while frequent follow ups and trabeculectomy were protective. **Conclusion:** A significant proportion of POAG patients progressed to advanced stages. Elevated IOP was a strong predictor of progression, with a 4.3-fold increased risk when target IOP was not achieved. Regular follow ups and trabeculectomy reduced the risk of progression. These findings emphasize the importance of achieving target IOP, ensuring regular follow up, and considering early surgical intervention to prevent POAG progression38. and associated vision loss.

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38. Andrade, D.M., Jetté, N., Chandran, I., *et al*… (2025). A global perspective on transitioning from pediatric to adult care in epilepsy. *Journal of International League Against Epilepsy,* Vol. 67(1). Doi 10.1111/epi. 18670

Abstract

Objective: Transition planning in epilepsy is crucial to ensure continuity of care, particularly for adolescents with complex needs, yet global practices remain undefined. The International League Against Epilepsy Transition Task Force (ILAE TTF) aimed to evaluate worldwide practices, barriers, and provider perspectives on transitioning patients with epilepsy from pediatric to adult healthcare systems. **Methods:** A cross-sectional, web-based survey was conducted between August 2021 and March 2024. The 50-item survey, adapted from validated instruments, was distributed in eight languages through ILAE chapters to health care professionals involved in the care of individuals with epilepsy. This study sought to evaluate the availability of structured transition programs, educational and systemic barriers, and recommendations to improve transition. Descriptive statistics, Fisher's exact tests, and multivariate logistic regression analyses were used to compare responses between adult and child neurologists, as well as by country region and income level. **Results:** A total of 316 neurologists from 58 countries completed the survey. Only 9% reported structured transition programs both locally and nationally, whereas 59% reported none or were unaware of any. Respondents from the Global South were significantly less likely to report transition programs (odds ratio [OR], 0.16; 95% confidence interval [CI], 0.94–0.27; $p < .001$). Half of the participants believed pediatric teams should continue follow-up after transfer. Major barriers included a lack of financial support, limited transition-specific training, and adult neurologists unfamiliar with childhood-onset epilepsies. Reported patient-educational gaps included vocational guidance (73%), reproductive health (60%), and driving (57%). Recommendations to improve transition included integrating transition training into neurology curricula (87%), creating dedicated clinical structures and care networks (87%), establishing joint

consultations between pediatric and adult neurologists (86%), and implementing national guidelines (89%). **Significance:** This study demonstrates that epilepsy transition practices remain fragmented and underdeveloped worldwide, especially in low-resource settings. Enhanced training, improved clinical infrastructure, and better policy coordination are crucial to facilitate effective and equitable transitions.

39. Anthony, S.N., Mbawalla, H.S., Kahabuka, F.K., *et al*... (2025). The effect of the modified basic package of oral care on adolescent dental caries status in Zambia: a cluster randomized trial. *Frontiers in Oral Health*, Vol. 6. Doi:10.3389/froh.2025.1542337

Abstract

Background: The Basic Package of Oral Care (BPOC) was developed by the World Health Organization (WHO) in order to improve oral health care worldwide, yet evidence of its effectiveness is scarce. This study primarily assessed the outcome of applying modified BPOC on dental caries prevalence and secondarily on knowledge and behaviors related to dental caries among adolescents in Copperbelt Province, Zambia**. Methods:** A parallel arms cluster randomized field trial including 22 public secondary schools (11-intervention, 11-control) was carried out between January 2021 and March 2023 in Copperbelt Province, Zambia. A validated questionnaire collected data with respect to socio-demographics, knowledge, and dental caries-related behaviors. The caries assessment spectrum and treatment (CAST) instrument was used to examine the spectrum of carious lesions during the baseline and the follow-up data collection phases. The 1st and 2nd follow-up exams were conducted at 18 and 24 months after baseline, respectively. The intervention group received a six-month duration modified BPOC intervention; the control group continued with their routine oral self-care. The analysis was based on the intention-to-treat protocol using generalized estimating equations (GEE), and the results were reported as OR (95% CI). **Results:** Out of 1,794 participants at baseline, 1,690 (94.2%) and 1,597 (89.0%) were examined at the 1st and 2nd follow-up intervals, respectively. Dental caries models showed significant interaction at 18 and 24 months [OR (95% CI) = 0.7 (0.6, 0.8), $p < 0.001$]. Adequate knowledge and use of fluoridated toothpaste models were the only secondary outcomes with significant interactions at 18- and 24-month follow-up. Stratified analysis at 18 and 24 months showed that the intervention group had better outcomes for adequate knowledge, use of fluoridated toothpaste, and dental caries. **Conclusion:** The modified BPOC was effective in reducing the prevalence of dental caries, improving knowledge on dental caries, and increasing the frequency of using fluoridated toothpaste among Zambian adolescents.

40. Athanas, R., Frumence, G., DeBoer, R. J., *et al*... (2025). Is It a Bribe? Research Personnels' Perceptions of the Ethical Aspects of Financial Compensation to Healthy Volunteers in Prevention Trials in Tanzania. *AJOB empirical bioethics*, Vol. 16(2). Doi:10.1080/23294515.2025.2474910

Abstract

Background: Financial compensation may be perceived as a catalyst to increase the recruitment and retention of healthy volunteers in clinical trials but also potentially as a form of undue

inducement. The ethical guidelines in Tanzania, while helpful, are not clear on what is considered reasonable compensation for healthy volunteers and the extent to which it influences participation. This study aimed to explore research personnels' perceptions of the ethical aspects of financial compensation to healthy volunteers participating in prevention trials in Tanzania. **Methods:** Qualitative semi-structured interviews were conducted in Tanzania with a purposive sample of 36 research personnel with different project roles ranging from principal investigators (PIs) to study staff on six prevention trials. The interviews were recorded and transcribed verbatim and thematic analysis was performed. **Results:** Most research personnel were physicians (64%) and male (67%) with a mean age of 48 years. Three qualitative themes were identified: ethical justifications for financial compensation, ethical concerns about financial compensation and fair compensation as income. Most Tanzanian research personnel were more aligned with the view that financial compensation is an ethical responsibility in respecting the value of a healthy volunteer's time and effort, especially for those who face barriers to participation, rather than being a bribe. However, there were those who raised ethical concerns about financial compensation that included perceptions of bribing low-income earners and increased misperceptions of trial activities. Research personnel also indicated that the specific amount of financial compensation has ethical implications. Amounts that were either too much or too little were viewed as unethical, whereas a modest rate was perceived as ethical. **Conclusions:** Paying healthy volunteers is a measure of respect and supported by the national Tanzanian research guidelines. However, a reevaluation of these research ethical guidelines to redefine reasonable, fair and just financial compensation, especially for those who face significant barriers to participation, would continue to respect healthy volunteers and provide regional guidance for researchers within the country.

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41. Athanas, R., Paulo, H. A., Frumence, G., *et al*... (2025). Does financial compensation matter for research participation in prevention trials in Tanzania? Perspectives of healthy volunteers. *PLoS One*, Vol. 20(9). Doi: 10.1371/journal.pone.0321353

Abstract

Background: Financial compensation is an important aspect of respect for people enrolled in clinical research, yet it continues to raise ethical questions. Respondents' characteristics, shaped by contextual and geographic factors, may influence perceptions of the ethical implications of financial compensation. This study explored the relationship between respondents' characteristics and their ethical perspective on the role of financial compensation in prevention trials in Tanzania. **Materials and methods:** A cross-sectional survey of 537 participants from two prevention studies within Tanzania was conducted. Participants were eligible if they participated in either the HIV Pre-Exposure Prophylaxis Vaccine Trial (PrEPVacc) trial or a non-inferiority trial of low-dose compared to standard high-dose calcium supplementation in pregnancy in Tanzania. A questionnaire was used to collect participants' sociodemographic characteristics and motivating reasons for research participation. Data analysis was performed using descriptive statistics for all variables. The chi-square test was used to assess associations between categorical demographic characteristics and binary outcome scores. Modified Poisson regression models were employed to examine predictors of positive or negative perspectives for each outcome. The P value of < 0.05 was used to ascertain the significant association between the variables. **Results:** Most participants

(82.5%) were young adults between the ages of 18 and 28 years, married or cohabiting (60.7%), and self-employed (55.9%). All participants in the cohort were female. Key motivations for research participation included medical follow-up (96.8%), quality information (94.4%), and disease control (92.2%). The majority also reported feeling a duty to participate (90.5%) with 50.1% indicating that they felt an obligation to the person who requested their participation. More than a third (36.9%) wanted to receive an incentive and reimbursement (38.7%) for out-of-pocket expenses. Financial compensation was a less common motivator among married or cohabiting participants compared to single individuals (APR = 0.54, 95% CI: 0.42–0.71, $p < 0.001$). Participants with primary education were also less likely to report financial compensation motivations compared to those with no formal education (APR = 0.57, 95% CI: 0.41–0.78, $p < 0.001$). Also, participants who had taken part in two or more trials had significantly higher non-financial participation motivations compared to those with only one research experience ($p < 0.001$). **Conclusion:** Financial compensation matters to certain participant subgroups, but its role varies. While some value monetary benefits, others prioritize altruism and trust in research oversight. A balanced, transparent compensation framework is needed to address financial needs while maintaining ethical integrity.

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42. Athman, L.P., Jonathan, A., Musa, F., *et al.*.. (2025). Clinical depression prevalence and associated factors among adolescents with sickle cell anemia in Dar es salaam, Tanzania: A cross-sectional study. *BMC pediatrics*, Vol. 25(1). Doi:10.1186/s12887-024-05359-w.

Abstract

Background: Depression commonly arises among adolescents who have experienced long-standing psychosocial difficulties, especially those facing chronic illnesses such as sickle cell anemia (SCA). SCA is a global health concern, and Tanzania is one of the countries with a high incidence, estimated at 8,000–11,000 births per year. This study aims to assess the magnitude and factors associated with depression among adolescents with SCA. **Methodology:** A cross-sectional analytical study was conducted on adolescents aged 10–19 years attending sickle cell clinics in referral hospitals in Dar-es-Salaam, Tanzania, from October 2023 to March 2024. Socio-demographic and SCA severity data were collected using pre-structured and pre-tested questionnaires. A validated Patient Health Questionnaire (PHQ-9) tool was used to screen for depression. Univariate and multivariate regression models were used to determine factors associated with clinical depression. A P value of less than 0.05 was considered statistically significant. **Results:** Among the 326 adolescents enrolled and screened, 49 adolescents (15%) had clinical depression, encompassing those in the moderate, moderately severe, and severe depression categories. Overall, 216 (53.7%) adolescents exhibited varying degrees of depression, ranging from mild to severe. Specifically, 167 participants (38.7%) had mild depression, 44 (13.5%) had moderate depression, 4 (1.2%) had moderately severe depression, and 1 (0.3%) had severe depression. Painful episodes within the previous 12 months were significantly associated with clinical depression (aOR = 2.49) (95% CI: 1.17–5.29, $p = 0.01$). **Conclusion:** Depression is common among adolescents with SCA in our setting. Painful episodes experienced within the previous 12 months were significantly associated with clinical depression. This study highlights

the need to screen adolescents with SCA for depression and integrate mental health services in sickle cell clinics.

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43. Atkins, K., Walker, D. A., Noon, K., *et al*... (2025). Recent incarceration and HIV risk among women who use heroin. *JAMA Network Open*, Vol. 8(1). Doi:10.1001/jamanetworkopen.2024.54455.

Abstract

Importance Women who use heroin in sub-Saharan Africa face elevated HIV risk linked to structural vulnerability including frequent incarceration. However, little is known about the association between incarceration and drug use and HIV outcomes among women who use heroin in Africa. **Objective** To estimate associations between incarceration and adverse HIV-related and drug use-related outcomes among women who used heroin. **Design, Setting, and Participants** This cross-sectional study included participants from Dar es Salaam, Tanzania, who were recruited using respondent-driven sampling. Eligible participants were women who used heroin who were aged 18 years or older and reported past-month heroin use. Data were collected from November 2018 to February 2019 and analyzed from September 2023 to May 2024. **Exposure** The exposure was recent incarceration, defined as self-report of being held in prison or jail in the past 6 months. **Main Outcomes and Measures** Main outcomes were self-reported HIV testing in the past 6 months, self-reported HIV status, and lifetime nonfatal overdose. Associations between recent incarceration and outcomes were examined using modified Poisson regression with robust variance estimation. **Results** This study included 195 women who used heroin (median [IQR] age, 33 [27-39] years); 119 women (61%) reported incarceration in the past 6 months. In bivariate analyses, incarceration was associated with transactional sex (111 of 119 [93.3%]), symptoms of anxiety (104 of 119 [87.4%]), physical violence victimization (83 of 118 [70.3%]), and stigma from family (eg, 99 of 119 women [83.2%] reported being treated differently) and health care clinicians (eg, 46 of 119 women [38.7%] reported receiving poor health care). In adjusted analyses, incarceration was associated with higher prevalence of sexual concurrency (101 of 119 [84.9%] vs 41 of 76 [54.0%]; aPR, 1.43; 95% CI, 1.16-1.78), stimulant use (26 of 119 [21.9%] vs 3 of 76 [4.0%]; aPR, 5.60; 95% CI, 1.63-19.28), and lifetime nonfatal overdose (51 of 119 [42.9%] vs 17 of 76 [22.4%]; aPR, 1.62; 95% CI, 1.01-2.61). Among women who used heroin living with HIV, incarceration was associated with stopping HIV care (9 of 27 [33.3%] vs 1 of 24 [4.2%]; aPR, 9.74; 95% CI, 1.22-77.22). **Conclusions and Relevance** In this cross-sectional study of HIV-related outcomes among recently incarcerated women who used heroin in sub-Saharan Africa, behavioral and structural vulnerabilities associated with incarceration were identified, which may exacerbate HIV disparities. Elevated stimulant use among recently incarcerated women who used heroin is of particular concern, given associations with adverse HIV outcomes. In the context of highly criminalized drug use, interventions targeting policing practices may be effective at reducing incarceration-associated risks. Findings could inform development and evaluation of multilevel interventions to reduce service interruptions and ensure linkage to HIV and substance use services during incarceration and reentry.

44. August, F., Nyamhanga, T., Kakoko, D.C., *et al*… (2025). Implementation of Patient Complaint Management Mechanisms for Quality Improvement in Maternal Health Services: Exploration of Provider Perspectives at Mkuranga District Hospital. *International Journal of Women's Health.* Doi:10.2147/IJWH.S516808

Abstract

Background: Although patient complaints are stressful, they are regarded as useful when framed as learning avenues (i.e., checks and balances in service delivery), further contributing to quality improvement mechanisms and enhancing accountability. A well-structured system of receiving and managing complaints may result in, but is not limited to, improved accountability, control of abuse and vulgar language, and assurance/compliance with the code of conduct or procedure. Tanzania established a National Guide for Complaint Management in Health Facilities. It is a prerequisite in Health facilities to enable the use of evidence from the complaints process for quality improvement. Despite the emphasis on feedback from patient concerns and the availability of a guide for patient concern management in Tanzania, there is a paucity of information on how well patients' complaints are received, dealt with, and managed by district hospitals, especially those emerging from maternal, newborn, and child health services. **Objective:** This study aimed to assess providers' perspectives on the implementation of Tanzania's guidelines for managing patient concerns in service delivery. **Methods:** A qualitative approach was used for data collection, and content analysis was performed. **Results:** The findings underscore the challenges related to hospital infrastructure for receiving patients' complaints, i.e., awareness and enthusiasm to use them, how complaints are dealt with, i.e., processing of the complaints, feedback mechanisms, i.e., learning from the complaints, integrating lessons learned from the complaints into service delivery, and quality improvement mechanisms in maternal health services. Findings are framed as barriers and facilitators of the process of receiving complaints and processing complaints/concerns, together with feedback mechanisms. **Conclusion:** The implementation of patient complaint mechanisms has remained ineffective despite the reported enablers, which smooth the implementation of patients' complaints, such as the availability of structures and guidelines, citizens' engagement/participation, self-esteem, and enthusiasm.

Keywords: *patient complaints, quality improvement, maternal health accountability mechanisms.*

45. Axwesso, W.J., Nyarubeli, I.P., Sakwari, G.H., *et al.*.. (2025). Occupational area noise exposure in small-scale metal industry in Dar-es-Salaam, Tanzania. *Annals of Work Exposures and Health*, Vol. *69*(5). Doi:10.1093/annweh/wxaf017

Abstract

Background: Noise exposure in the informal small-scale metal industry may cause hearing loss, due to metal manufacturing processes. In Tanzania, this industry uses hand tools in metal fabrication processes and is not regulated by authorities. **Aim:** To describe noise exposure levels and to suggest possible improvements in the small-scale metal industry in Dar-es-Salaam,

Tanzania. **Methods:** The study was conducted in 3 small-scale metal industry cooperatives in Dar-es-Salaam, with self-employed workers. Noise levels were measured using a portable sound level meter (Brüel and Kjær type 2250). Data was analyzed using descriptive statistics and analysis of variance to compare noise levels. A walk-through survey and an interview were conducted to collect information on work operations and control measures. **Results:** The workers were seated close to one another in open rooms and produced continuous noise during the whole workday. No hearing protection or noise reduction strategies were observed. The average noise exposure level was 90.9 dBA, 106.9 dBA, and 89.7 dBA in the 3 metal companies X, Y, and Z, respectively, and the differences between companies were statistically significant. Company Y, with the highest noise level, had more workers. The average peak noise level was 124.6 dBA. **Conclusions:** The studied workplaces had noise exposure levels above 85 dBA, the recommended limit value in Tanzania. Immediate action with the provision of hearing protection for the workers is needed, and the metal companies and the labor and health authorities in Tanzania should discuss the reorganization of the work to protect workers from noise levels.

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46. Axwesso, W.J., Sakwari, G., Nyarubeli, I.P., et al... (2025). Relationship Between Workplace Noise Exposure and Sleep in Tanzania. *Noise and Health*, Vol. 27(129). Doi: 10.4103/nah.nah_107_25.

Abstract

Background: High noise levels during daytime work may cause sleep disturbances amongst workers, but research findings are inconclusive so far. **Objective:** This study aims to compare sleep amongst workers exposed to high and low daytime noise during work in a developing country, where workplaces often have high noise levels. **Methods:** A cross-sectional study was conducted amongst 181 metal industrial workers (high-noise-exposed workers) and 72 office cleaners (low-noise-exposed workers) in Tanzania. The average noise levels were 97.9 and 76.6 dBA for the high- and low-noise-exposed workers, respectively. An interview-based questionnaire was used to collect data on sociodemographic characteristics, sleep variables, the Epworth sleepiness scale (ESS) and the Bergen insomnia scale (BIS). Data were analysed using descriptive statistics, t-tests, Kruskal–Wallis tests, Pearson chi-square tests and logistic regression analysis. **Results:** The mean BIS score for high-noise-exposed workers was 13.2, with 40.3% reporting insomnia and 39.8% reporting excessive daytime sleepiness (ESS ≥ 11). The low-noise-exposed workers had a mean BIS score of 15.4, with 51.4% reporting insomnia and 41.7% reporting excessive daytime sleepiness. The crude odds ratio (OR) of insomnia when exposed to high noise was 1.56 (95% CI = 0.90–2.718, P = 0.111), and the crude OR for excessive daytime sleepiness was 1.08 (95% CI = 0.62–1.88, P = 0.782). Insomnia and daytime sleepiness were not different between groups when adjusting for age, marital status, education, smoking, alcohol, coffee consumption and daytime rest periods. **Conclusion:** No differences were found between daytime high- and low-noise-exposed workers in relation to self-reported sleep variables. The results must be interpreted with caution due to the use of self-reports and possible unmeasured confounders.

47. Azizi, K., Masanja, H., Mchome, N.J., *et al*... (2025). Acceptability of Novel Formulated Ready to Use Food for Management of Moderate Acute Malnutrition (MAM) in Children Aged 6–59 Months in Tanzania: A Facility-Based Acceptability Trial. *Food Science & Nutrition*, Vol: 13(10). Doi: 10.1002/fsn3.71093

Abstract

Malnutrition contributes to nearly half of all deaths among children below 5 years of age; it is a significant burden of suboptimal development in children who survive. Novel Ready-to-Use Food Supplements (RUFs) have been developed to treat moderate acute malnutrition (MAM) in children aged 6–59 months in Tanzania. This study aimed to assess the acceptability of these new RUFs, which are made from locally sourced ingredients. A facility-based acceptability trial was conducted to evaluate the new RUF formulations for MAM management. A total of 317 children aged 6–59 months were systematically randomly sampled and enrolled. Paired preference tests comparing the two novel RUFs (RUF 1 and RUF 5) were performed in Temeke Municipality, Tanzania. For the preference tests, mothers or caregivers received one 100 g sachet of either RUF 1 or RUF 5 daily for 2 days. For the acceptability trial, one sachet was provided every other day for 2 days. Each child tasted one of the novel RUFs on each day. Both novel RUFs demonstrated high acceptability, with over 90% of children accepting them. The mean average rating for RUF 5 was significantly higher than for RUF 1 across all attributes ($p = 0.042$). Mothers' or caregivers' liking rates for the porridge were 84.9% for RUF 1% and 87.7% for RUF 5 as MAM treatments. These findings underscore the importance of incorporating local taste preferences and cultural acceptability when developing therapeutic foods.

48. Bahati, R., Kitua, D., Selestine, L., *at el*... (2025). Factors influencing the severity of diabetic foot ulcers: a cross-sectional study. BMC Endocrine Disorders, Vol. 25(1). Doi:10.1186/s12902-024-01785-0

Abstract

Background: Diabetic foot ulcers (DFUs) are prevalent among individuals with poorly controlled diabetes, and severe cases can result in increased morbidity and a poor quality of life. This study aimed to identify the factors that affect the severity of DFUs, offering insights into potential interventions that could enhance patient outcomes. **Methodology:** A prospective cross-sectional study was conducted from August 2023 to March 2024 at Muhimbili National Hospital in Tanzania, involving 177 consecutively selected patients with DFUs. The primary outcome variable was the severity of DFUs, which was assessed using the Meggitt-Wagner severity score. Both socio-demographic and clinical characteristics were evaluated to determine their association with the outcome variable using multivariate ordinal logistic regression analysis. **Results:** The median age of the study participants was 60 years (IQR = 52–68), with a male-to-female ratio of 2 to 1. Notably, Wagner grades 4 and 5 accounted for 57.6% of the participants. Factors associated with increased severity of DFUs included age over 60 years (aOR = 1.83, 95% CI 1.05–3.23, $p = 0.035$) and poor adherence to diabetes medications (aOR = 2.62, 95% CI 1.36–5.09, $p = 0.004$). Conversely, having health insurance coverage was linked to better outcomes (aOR = 0.51, 95% CI 0.27–0.96, $p = 0.036$). **Conclusion:** The study highlights factors that can enhance comprehensive

care for diabetic patients, especially elderly individuals. Key measures include implementing educational programs to encourage medication adherence, improving healthcare access, particularly for uninsured individuals, promoting insurance coverage, and making diabetes treatments more affordable.

49. Bahr, J., Suutala, A., Kucukel, H., *et al*… *(*2025). AI-supported versus manual microscopy of Kato-Katz smears for diagnosis of soil-transmitted helminth infections in a primary healthcare setting. *Scientific report,* Vol. 15(20332). Doi:10.1038/s41598-025-07309-7

Abstract

Soil-transmitted helminths primarily comprise *Ascaris lumbricoides*, *Trichuris trichiura*, and hookworms, infecting more than 600 million people globally, particularly in underserved communities. Manual microscopy of Kato-Katz thick smears is a widely used diagnostic method in monitoring and control programs, but is time-consuming, requires on-site experts and has low sensitivity, especially for light intensity infections. In this study, portable whole-slide scanners and deep learning-based artificial intelligence (AI) were deployed in a primary healthcare setting in Kenya. Stool samples ($n = 965$) were collected from school children and Kato-Katz thick smears were digitized for AI-based detection. Light-intensity infections accounted for 96.7% of cases. Three diagnostic methods - manual microscopy, autonomous AI and human expert-verified AI - were compared to a composite reference standard, which combined expert-verified helminth eggs in physical and digital smears. Sensitivity for *A. lumbricoides*, *T. trichiura* and hookworms was 50.0%, 31.2%, and 77.8% for manual microscopy; 50.0%, 84.4%, and 87.4% for the autonomous AI; and 100%, 93.8%, and 92.2% for expert-verified AI in smears suitable for analysis ($n = 704$). Specificity exceeded 97% across all methods. The expert-verified AI had higher sensitivity than the other methods while maintaining high specificity for the detection of soil-transmitted helminths in Kato-Katz thick smears, especially in light-intensity infections.

50. Bahsan, K., Kitua, D., Mwesige, S, *et al*... (2025). Hemodynamically Stable Traumatic Diaphragmatic Rupture with Herniated Shattered Spleen: A Case Report. *East Africa Science,* Vol. *7*(1). Doi:10.24248/easci. v7i1.104

Abstract

Background: High-energy blunt abdominal trauma frequently involves multiple organ systems, often resulting in injuries to solid organs and, in some cases, visceral herniation due to diaphragmatic rupture. Hemodynamic stability in such cases is rare, particularly when the spleen is shattered. We present a unique case of a hemodynamically stable patient with these injuries. **Case:** A 55-year-old male involved in a motor vehicle accident presented to our facility hemodynamically stable, seven days after initial management for a traumatic hemothorax, with a missed diagnosis of diaphragmatic rupture and herniated, shattered spleen. The diagnosis was confirmed following a thorough physical examination and cross-sectional imaging. Laparotomy was conducted to perform a splenectomy and repair a diaphragmatic rupture, and the patient had an uneventful postoperative recovery.

Conclusion: This case highlights the critical need for a high index of suspicion and comprehensive evaluation in cases of high-energy trauma, emphasizing the importance of detailed examination and cross-sectional imaging in detecting overlooked injuries. The patient's hemodynamic stability, despite a shattered spleen, may have resulted from the compressive effect of the hernia defect on the splenic vessels, a factor that could play a role in similar trauma cases.

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51. Bajaria, S., Yusufu, I., Mboya, I.B., *et al*… (2025). Prevalence and correlates of anxiety and depressive symptoms among adolescents aged 10–19 years in six sub-Saharan African countries, China and India: A cross-sectional study. *PLOS Mental Health*, Vol. *2*(10). Doi: 10.1371/journal.pmen.0000479

Abstract

Although adolescence (10–19 years) signifies a vulnerable phase for the onset of depression and anxiety, research on the symptoms of these mental health conditions is scarce in low- and middle-income countries. This study examined the prevalence and correlates of anxiety and depressive symptoms among adolescents in six sub-Saharan African countries (SSA), China, and India, where these conditions are often underdiagnosed, highlighting the need for evidence to support culturally appropriate interventions. We analyzed cross-sectional survey data from 9,849 adolescents in Burkina Faso, Ethiopia, Ghana, Nigeria, Tanzania, Uganda, China, and India. The Patient Health Questionnaire (PHQ-4) assessed the prevalence of anxiety and depressive symptoms. Log-linear regression models estimated the relative risk and 95% confidence intervals (CI) for the correlates of anxiety and depressive symptoms. The overall prevalence of anxiety and depressive symptoms was 11.3% (95%CI 10.6-11.9%) and 9.9% (95%CI 9.3-10.5%), respectively. Prevalence varied significantly across countries (p-value<0.001), with high rates of anxiety and depressive symptoms found in China (26.3%, 17.0%), Ghana (17.6%, 19.6%), and Nigeria (13.2%, 13.7%). Adolescents aged 15–19 years, females, with low socioeconomic status (SES), who visited a health facility, those with a history of alcohol use, or those who experienced multiple serious injuries in the past year, had an increased risk of anxiety and depressive symptoms. Adolescents with regular physical activity had a reduced risk of anxiety and depressive symptoms. Anxiety and depressive symptoms are common among adolescents in China, Ghana, and Nigeria, but relatively rare in India and Ethiopia. These symptoms of mental health issues are associated with socio-demographic characteristics and behaviors. These findings suggest a need for policies promoting healthy lifestyles and programs to reduce risks among adolescents through physical activity, integrated mental health screening, and substance use prevention, particularly for older adolescents, females, those with a low SES, and those with a history of substance use.

52. Bakari, I., Sakafu, L., Saleh, M.A. (2025). Ocular Sonographic Patterns and Associated Predictors of Raised Intracranial Pressure Among Paediatric Patients with Head Injury Attending Muhimbili Orthopaedic Institute. *Saudi Journal of Radiology*, Vol. 4(2). Doi:10.55038/79rdbs74.

Abstract

Background: Raised intracranial pressure (ICP) is a life-threatening complication of traumatic brain injury (TBI) in children and demands prompt recognition. Conventional ICP monitoring methods like External Ventricular Drainage, though effective, are invasive and carry procedural risks. Ocular sonography, particularly measurement of the optic nerve sheath diameter (ONSD), offers a non-invasive, accessible alternative for early ICP assessment. However, its utilization in pediatric trauma care remains limited. Objective: To determine the Ocular Sonographic patterns and associated predictors of raised Intracranial Pressure among pediatric patients with head injury attending Muhimbili Orthopedic Institute from June 2024 to March 2025. **Materials and Methods:** A prospective cross-sectional study was conducted involving 113 pediatric TBI patients (GCS ≤14) recruited through convenience sampling. Clinical data were collected using structured tools. Ocular ultrasound of the right eye was performed using B-mode sonography to measure ONSD 3 mm posterior to the globe. Data analysis was conducted using SPSS v25. Chi-square tests and logistic regression analyses were used to explore associations between clinical features and raised ICP. **Results:** Among 113 participants (mean age 8.09 years; 69.9% male), 74.3% had moderate TBI. Ocular sonography revealed optic disc elevation in 6.2% of cases; no instances of retinal detachment or vitreous hemorrhage were found. Mean ONSD increased with age. Clinical features such as seizures (68.1%) and vomiting (61.9%) were common, while hydrocephalus (0.9%) and papilledema (1.8%) were rare. Lower GCS scores were significantly associated with suspected raised ICP ($p = 0.035$), whereas seizures and vomiting lost significance in multivariate analysis. **Conclusion:** Glasgow Coma Scale score is a significant predictor of raised ICP in pediatric head injury patients. The absence of papilledema and other ocular sonographic patterns does not exclude raised ICP, supporting the utility of ONSD measurement as a rapid, non-invasive screening tool for early ICP assessment in resource-limited settings.

53. Bakari, R. A., Haule, G. M., Chibwae, A., *et al*... (2025). Rare Case of Long Retained Button Foreign Body in Esophagus Removed by Esophagostomy: A Case Report from Muhimbili National Hospital, Tanzania. *Clinical Case Reports*, Vol. 13(11). Doi: 10.1002/ccr3.71378

Abstract

Challenges in the management of dysphagia from a patient with a long-retained esophageal foreign body, unveiling the diagnostic and treatment challenges. Reported a rare case of an esophageal foreign body from a button presenting with long-standing dysphagia; the button was retrieved by thoracotomy with esophagostomy. This is the rare case of an esophageal foreign body managed by surgery.

54. Bakari, R.A., Chibwae, A., Eliaman, N.T., *et al.*… (2025). Unusual variant of anorectal malformation with rectouterine fistula: a rare congenital anomalies, management and review of literatures. *Journal of Rare Diseases*, Vol. 4(1). Doi:10.1007/s44162-025-00137-3.

Abstract

Background: Anorectal malformations (ARMs) represent a spectrum of congenital anomalies involving the distal anus, rectum, and urogenital tracts. A rectouterine fistula is an extremely rare variant in females, with limited reports and no standardized management approach, particularly in low-resource settings. **Case presentation:** We report a 7-day-old female neonate with imperforate anus and intestinal obstruction. Clinical evaluation and surgical exploration revealed a high-type ARM with a fistulous connection between the rectum and uterine body, classified according to the Krickenbeck system as a rare variant of a fistula to the female genital tract. The initial management involved laparotomy, fistula ligation, and formation of an end colostomy. The postoperative recovery was uneventful. The patient was scheduled for a definitive pull-through anorectoplasty after 9–12 months, once growth and nutritional status improved. **Conclusion:** This case represents one of the few documented examples of congenital rectouterine fistula in the neonatal period. A staged surgical approach remains safe and effective in resource-limited settings. Early diagnosis, multidisciplinary collaboration, and individualized surgical planning are crucial for optimal outcomes.

***Keywords**: Rectoruterine fistula, Anorectal malformations.*

55. Bakari, R.A., Chibwae, A., Kidoko, N.N., *et al*... (2025). A Rare Case of a Young Girl with Hydrocele of the Canal of Nuck Mimicking Inguinal Hernia: A Case Report. *Clinical Case Reports*, Vol. 13(10). Doi: 10.1002 /ccr3.70987.

Abstract

A rare disorder in females called hydrocele of the canal of Nuck is brought on by the processus vaginalis failing to obliterate. We describe a 13-year-old girl who developed a type I hydrocele of the canal of Nuck after presenting with left inguino-labial swelling. Despite misdiagnosis by ultrasound, surgical exploration verified the diagnosis. The hydrocele was completely excised, and the canal at the deep inguinal ring was ligated. The significance of taking this uncommon case into account while making a differential diagnosis for female inguinal swellings is highlighted by this instance.

56. Bamodu, O. A., Goh, Y. X., Hong, C. T., *et al*... (2025). Explainable machine learning for neurological outcome prediction in out-of-hospital cardiac arrest survivors undergoing targeted temperature management: a multi-cohort validation study. *Journal of NeuroEngineering and Rehabilitation*, Vol. 23(*4*). Doi:10.1186/s12984-025-01821-7

Abstract

Background: Early risk assessment in comatose survivors of out-of-hospital cardiac arrest (OHCA) remains clinically challenging, particularly for patients undergoing targeted temperature management (TTM). This study aimed to develop and externally validate an interpretable machine learning model to predict neurological outcomes in TTM-treated comatose OHCA survivors, leveraging multinational registry data to improve generalizability and early-phase characterization. **Methods:** Data were derived from two multi-center registries: the Korean Hypothermia Network prospective registry (KORHN-pro, $n = 1{,}050$) and the Taiwan Network of Targeted Temperature Management for Cardiac Arrest (TIMECARD, $n = 393$). Adult OHCA patients who remained comatose after return of spontaneous circulation (ROSC) were included. The KORHN-pro dataset was used for model development and internal validation via 10-fold cross-validation, while the TIMECARD registry served as an independent external validation cohort. The primary outcome was a favorable neurological status (Cerebral Performance Category score 1–2) at hospital discharge. Eighteen pre-intervention variables were used to train seven machine learning algorithms. The best-performing model was selected based on discrimination metrics. Model interpretability was evaluated using Shapley Additive exPlanations (SHAP) to examine feature importance, interaction effects, and case-level predictions. **Results:** The eXtreme Gradient Boosting algorithm achieved the highest performance, with an area under the receiver operating characteristic curve of 0.925 in internal and 0.852 in external validation. Key predictive determinants included initial shockable rhythm, time to ROSC, adrenaline dose, and Glasgow Coma Scale motor score. SHAP analysis highlighted synergistic effects among features, particularly between cardiac rhythm and early neurological status, which were further illustrated through case-level explanations in the external validation cohort. **Conclusion**: This study presents an interpretable machine learning model for early neurological stratification in comatose OHCA survivors undergoing TTM. Using multinational registry data, the model demonstrated robust performance across both development and external validation cohorts. By integrating clinically relevant predictors, this approach provides individualized estimates to support early assessment and guide future therapeutic considerations. Notably, this study was not designed to compare different TTM temperature strategies, and results should not be interpreted in that context. The explainable framework is intended to complement clinical evaluation without replacing physician judgment or informing treatment withdrawal decisions.

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57. Barkas, F., Brandts, J., Bacquer, D.D., *et al… (*2025). Global Variation in Lipoprotein(a) Levels Among Patients with Coronary Heart Disease: Insights from the INTERASPIRE Study and Implications for Emerging Lp(a)-Lowering Therapies. *JACC Journals*, Vol. 85(21). Doi: 10.1016/j.jacc.2025.04.010

Abstract

Background: Lipoprotein(a) [Lp(a)] is a common risk factor for atherosclerotic cardiovascular disease, potentially more atherogenic per particle than low-density lipoprotein. An estimated 1.5 billion individuals globally have elevated levels ≥125 nmol/L, considered a risk-enhancing threshold. Although Lp(a) levels vary by ethnicity, ongoing trials of novel therapies in predominantly secondary prevention patients use fixed Lp(a) enrollment thresholds. **Objectives**: The purpose of this study was to assess Lp(a) levels in coronary heart disease (CHD) patients

across geographical regions, providing inference on the proportions potentially eligible for future Lp(a)-lowering therapies and whether these vary by region and country. **Methods:** INTERASPIRE (International Action on Secondary Prevention through Intervention to Reduce Events) enrolled adults hospitalized with CHD in the previous 6 to 24 months. Lp(a) levels were available in 13 countries across 6 World Health Organization (WHO) regions: Africa (Kenya, Nigeria, Tanzania), Americas (Argentina, Colombia), Eastern Mediterranean (UAE), Europe (Poland, Portugal), South-East Asia (Indonesia), and Western Pacific (China, Malaysia, Philippines, Singapore). Lp(a) measurements were performed once and centrally in Helsinki using an isoform-independent assay for 11 countries, and locally in Indonesia and China with standardization to the core laboratory. Lp(a) levels are reported as median (Q1-Q3) and proportions above different thresholds. **Results**: (a) results were available for 3,928 patients from 13 countries (mean age: 60.2 ± 10.2 years; 21.1% women). Median Lp(a) was 32 nmol/L (Q1-Q3: 11-89 nmol/L) overall, with 17.6% having levels ≥125 nmol/L. Median levels varied by region—highest in Africa (62 nmol/L) and lowest in Western Pacific (22 nmol/L)—and also between countries within regions: Europe (Portugal: 59 nmol/L vs Poland: 19.5 nmol/L), South America (Colombia: 46 nmol/L vs Argentina: 32 nmol/L) and Western Pacific (Malaysia: 39.5 nmol/L vs Philippines: 14 nmol/L). Overall, the proportions of patients with Lp(a) ≥150, 175, and 200 nmol/L (hence eligibility for future Lp(a)-lowering therapies) were 13.0%, 9.3%, and 6.2%, respectively, with eligibility also varying among countries: highest in Portugal (25.5%, 18.3%, and 11.6%) and lowest in Philippines (4.3%, 2.5%, and 1.3%).**Conclusions**: The vast majority of patients with CHD have Lp(a) levels far below what is considered a typical risk-enhancing threshold, suggesting that the attributable risk from Lp(a) is more complex than previously perceived. Furthermore, wide geographical variations in Lp(a) levels above entry criteria for ongoing trials could impact equitable access to therapies, if these trials are positive

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58. Baroudi, M., El Nabris, S., Tungu, M., *et al*.... (2025). Keep distance and hear me out! Swedish-speaking children's pandemic narratives informing rights-based approaches to future crises. *Frontiers in Public Health*, Vol. 13. Doi: 10.3389/fpubh.2025.1636066.

Abstract

Background: The COVID-19 pandemic disrupted children's lives globally, yet limited research centres their voices in evaluating crisis responses. Sweden's unique strategy, emphasizing voluntary guidelines rather than strict lockdowns, provides a critical context to explore how the pandemic policies reshaped children's daily lives and affected systemic inequities between them; and to highlight children's perspectives on how societal actors could better uphold children's rights in future crises. **Methods:** This qualitative study engaged 44 Swedish-speaking children (aged 10–17) from diverse neighborhoods in Umeå, Sweden, through ten focus group discussions conducted between February 2023 and January 2024. Child-friendly adaptations of the United Nations Convention on the Rights of the Child (UNCRC) articles guided discussions on pandemic experiences. Data included transcripts, participant drawings, and field notes, analysed via reflexive thematic analysis. **Results**: The findings consolidate into four central themes. First, "Keep distance! COVID forming a new way of life" captures how Sweden's voluntary measures reshaped daily norms, while prolonged isolation from quarantines, canceled activities, and restricted social

interactions deepened confinement. Second, “Erosion of well-being and need for information and support” highlights the decline in physical health and mental well-being, compounded by inadequate mental health resources and schools’ dual role as social refuges and infection risks. Third, “Paradox of ‘Normalcy’: halted education and systemic inequities” reveals how Sweden’s open-school strategy masked halted learning, digital divides, and housing disparities shaping quarantine experiences. Finally, “Hear me out! Engaging children in decision-making” underscores children’s critiques of exclusion from policymaking, despite their resilience and proposals for participatory solutions. **Conclusion**: This study emphasizes the need to incorporate children’s voices in policymaking, particularly during crises, to ensure their rights and well-being are upheld. It calls for a shift in crisis response beyond just physical safety to include mental and emotional health, highlighting the importance of school-based mental health services and tailored support for marginalized groups in Sweden. To truly implement UNCRC Article 12, the country should establish formal systems that actively engage children and consider their feedback in decision-making processes.

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59. Barrington, C., Savage, V., Davis, W., *et al*... (2025). “‘Corona’was bigger than AIDS”: exploring how female sex workers with HIV navigated HIV care and treatment during the onset of COVID-19 in the Dominican Republic and Tanzania. *Culture, health & sexuality*, Vol. 27(12). Doi:10.1080/13691058.2025.2493132

Abstract

Background: Initial efforts to control COVID-19 included restricting human movement, which caused heightened economic insecurity and challenges to the management of chronic health conditions such as HIV. This study aimed to: (1) explore how female sex workers living with HIV in the Dominican Republic and Tanzania, two different cultural and epidemic contexts, reacted to the onset of the COVID-19 pandemic, and (2) assess how lockdown measures impacted HIV care and treatment experiences. We analysed data from interviews (20 in each country) conducted during the onset of the COVID-19 pandemic as part of a longitudinal study of the social determinants of HIV outcomes. Using narrative and thematic analytic techniques, we identified fear and financial insecurity as the two main impacts of the initial COVID-19 lockdown on female sex workers in both settings. While participants experienced challenges accessing HIV-related care and treatment and received limited to no state-level social protection, they adapted to these changes by drawing on individual resilience and family and community support to sustain adherence to medication and overall well-being. Findings highlight the need for systems-level social protection to reduce economic insecurity before shocks and bolster individual resilience, family, and community-level supports during crises such as COVID-19

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60. Benedict, F., Mramba, C.V., Kaaya, S., *et al*... (2025). Developing a regional mental health plan for Dar es Salaam, Tanzania: Results from a situational analysis, qualitative inquiry, and stakeholder engagement process. *SSM-Mental Health*, Vol. 8. Doi: 10.1016/j.ssmmh.2025.100532.

Abstract

Background: Mental health services in sub-Saharan Africa, including Tanzania, are little studied and hence challenges and opportunities are not well known, leading to difficulties in improving access to, and quality of, services to those in need. **Objectives:** 1. To conduct a situational analysis of mental health services in the Dar es Salaam region, 2. To consult with key stakeholders on mental health services delivery and planning, and 3. To develop a regional mental health services plan. **Methods:** This was a mixed-methods study, using the PRIME situational analysis tool, which provided a quantitative overview of mental health service needs, resources, and activities. We conducted individual in-depth interviews (IDI, n = 5) with regional mental health service managers, and focus group discussions (FGD, n = 7) with 29 mental healthcare workers at primary healthcare facilities. We led a workshop with regional mental health service managers to discuss findings and to develop a regional mental healthcare services plan. **Results:** The situational analysis identified a large burden of mental health care needs, but also a variety of health care services and providers in the region. The IDIs and FGDs found inadequate health facilities and staff providing mental health services, ineffective implementation of mental health policy regarding user fee exemptions and cost sharing, stigma in the community, and low community awareness. The financial burdens on patients were lower if patients were covered by health insurance, but health insurance has limitations regarding medication provision. The regional mental health plan proposes strengthening mental health services by integrating them into primary health care facilities, training health providers and other workers on mental health issues, strengthening referral systems, and increasing government and social insurance funding. **Conclusion:** Despite barriers hindering mental health service provision in Dar es Salaam, there are positive factors that could potentially make mental health delivery more effective and sustainable. Financial and human resource constraints will limit such developments. Implementation of the regional plan will require ongoing engagement with stakeholders, but it has the potential to enhance access to and improve the quality of mental health care in the region.

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61. Benjamin, G., Mrema, E.J., Nhumba, N.W., *et al*… (2025). Adherence to iron deficiency interventions among pregnant women attending antenatal clinics in Ubungo municipality, Dar es Salaam, Tanzania. *Bulletin of the National Research Centre*, Vol. 49(1). Doi:10.1186/s13104-018-3433-3

Abstract

Background: Iron deficiency anemia in pregnant women remains a public health concern despite iron deficiency interventions that have been implemented. This study investigated adherence to iron deficiency interventions and the associated factors among pregnant women attending antenatal clinics in Ubungo Municipality. **Methods:** This cross-sectional study used a systematic random sampling technique to obtain 503 participants from the surveyed clinics. Interviews were conducted by using interviewer-administered questionnaires. Data were analyzed using Stata version 17. The study employed binary and multivariable logistic regression analysis to determine factors associated with adherence to iron deficiency interventions. **Results:** In this study, 72% of participants were non-adherent, and 28% were adherent to the interventions. In multivariable regression analysis, participants who forgot to take their iron tablets on most days (AOR 2.35; 95% CI 1.23–4.48) and those who reported that not enough time was spent on education and counseling

during antenatal clinic visits (AOR 3.87; 95% CI 1.08–13.84) were more likely to be non-adherent to iron deficiency interventions. **Conclusions:** The majority of pregnant women in Ubungo Municipality were non-adherent to iron deficiency interventions. Non-adherence was associated with a tendency to forget taking iron tablets and a lack of time in providing health education and counseling. Improving the quality of health education and counseling could increase adherence to iron deficiency interventions and reduce maternal–child morbidity and mortality rates.

62. Berhe, K.K., Mselle, L.T., Gebru, H.B. (2025). Psychometric evaluation of the problem areas in diabetes (PAID) scale among people with type 2 diabetes in Ethiopia: a tool validation study. *BMC Research*, Vol. 18(1). DOI:10.1186/s13104-025-07238-8

Abstract

Objective: to assesses the psychometric properties of the Problem Area in Diabetes (PAID) scale for Ethiopian patients with type 2 diabetes. **Results:** The confirmatory factor analysis for the Ethiopian Problem Area in Diabetes (Eth-PAID) scales demonstrated good model fit to the one, two, three, and four factor structures. The one-factor model Eth-PAID-20 scale showed acceptable internal consistency ($\alpha = 0.82$), but the "Diabetes distress" subscale of two, three, and four-factor structures partially satisfied the internal consistency (ranged $\alpha = 0.74$-77). The Eth-PAID-20 scale correlated negatively with self-care efficacy ($r = 0.131$, $P = 0.06$) and positively with Fasting Blood Sugar (FBS) level ($r = 0.02$, $P = 0.86$), which implies poor convergent validity. Moreover, "lack of confidence," "food-related problem," and "support-related problem" subclasses of two, three, and four-factor models showed very weak convergent validity. Discriminative validity revealed that female patients (30.16 ± 13.11), $t = -2.73$, $p = 0.007$, $d = 0.4$) and patients who lived alone (28.05 ± 12.98), $t = 2.542$, $p = 0.021$, $d = 0.5$) had significantly higher distress scores in Eth-PAID-20 as one factor model.

63. Berhe, K.K., Mselle, L.T., Gebru, H.B. (2025). Barriers to effective diabetes mellitus self-management (DMSM) practices among type 2 diabetic patients in Tigray region, northern Ethiopia: a qualitative study. *Discover Public Health*, Vol. *22*(1). Doi:10.1186/s12982-025-01032-4

Abstract

Background: The prevalence of diabetes in 2021 was 10.5% worldwide, 4.5% in Africa and 4.7% (3 million people) in Ethiopia. Almost all studies were from developed countries with well-established healthcare systems for diabetic care; the generalizability of these findings to sub-Saharan Africa like Ethiopia is questionable. The aim of the study was to investigate the barriers to self-management among Type 2 diabetic patients in Tigray, Ethiopia. **Methods:** A qualitative study was conducted using in-depth interviews between July 10 and September 30, 2020 at three hospitals of Tigray region. The three main groups of the study population were adult patients with type 2 diabetes mellitus, caretakers (family members) and health care providers. Convenient sampling technique was employed to recruit twenty-two type 2 diabetic patients, ten caretakers and ten health care providers. IDIs were conducted using an interview guide and audio tapes of all interviews were directly transcribed as true verbatim. A six-step inductive thematic analysis

method was used. **Result:** Five major barrier categories were identified. Educational and psychological barriers were inadequate knowledge of self-care practices, low perception and susceptibility of the illness, emotional responses and negative emotions respectively. Behavioral belief and socio-cultural barriers include difficult changing old habit, misconceptions, inadequate support, peer influence and cultural belief. Financial problem, busy work schedules, long distance to health facilities, critical shortage of medications and medical supplies, inadequate access to variety of foods and health care provider related challenges were perceived behavioral control barriers. **Conclusion:** Participants reported that educational, psychological, behavioral belief; socio-cultural and behavioral barriers affect type 2 diabetic patients' self-care practices. Therefore, regular structured diabetes education should provide to patients, family and community; patients with mental health problems and financial burdens need to be linked to psychiatric clinic and social workers respectively.

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64. Beynon, F., Mhalu, G., Kumar, D., *et al*… (2025). Effectiveness of introducing pulse oximetry and clinical decision support algorithms for the management of sick children in primary care in India and Tanzania on hospitalization and mortality: the TIMCI pragmatic cluster randomised controlled trial. *EClinicalMedicine*, Vol. (85) (103306).

Abstract

Background: Pulse oximetry can support better detection of hypoxaemia, an important mortality predictor, and digital clinical decision support algorithms (CDSAs) can strengthen adherence to Integrated Management of Childhood Illness (IMCI) guidelines. This study sought to address evidence gaps on the impact of providing these tools to primary care healthcare providers on under-five hospitalizations and mortality. **Methods:** A pragmatic, parallel group, superiority, cluster randomised controlled trial (RCT) conducted in 172 primary care facilities in India and Tanzania (106 and 66 facilities, respectively). Facilities were randomly allocated (1:1) in India to pulse oximetry (PO) or control and (1:1:1) in Tanzania to PO + CDSA, PO, or control, stratified by facility type and location (India: district; Tanzania: urban/rural). Sick children aged 0–59 months attending study facilities were eligible. Pulse oximeters and CDSAs were given to healthcare providers, along with training and guidance, supportive supervision, monitoring, community engagement, and operational support. Providers were advised to use pulse oximetry for all sick children in India, and in Tanzania for all 1–59 days, and for those 2–59 months with cough, difficulty breathing, or a moderate to severe illness. Urgent referral was recommended for SpO_2 <90%. Trained research assistants collected data from caregivers and facility records on Day 0, with a follow-up phone call or visit on Day 7 and 28. Two primary outcomes, based on caregiver report, were assessed centrally: 1) rates of 'severe complication' (death, delayed hospitalization (≥24 h from the Day 0 consultation) or hospitalization without Day 0 referral) by Day 7; and 2) rates of hospitalization within 24 h of the Day 0 consultation, with referral. Intention-to-treat analyses were performed on combined and individual country data, stratified by age (1–59 days, 2–59 months). Primary outcomes were assessed using generalized estimating equations for logistic regression, with facilities as clusters. Results: were estimated in terms of odds ratios and risk differences (RDs), adjusted where computable. The trial is registered with clinicaltrials.gov (NCT04910750). **Findings**: A total of 157,677 sick children (1–59 days:

3188 control, 4012 PO, 2386 PO + CDSA; 2–59 months: 54,318 control, 56,968 PO, 36,805 PO + CDSA) were enrolled from 28 March, 2022 to 31 March, 2023 in Tanzania and from 20 June, 2022 to 21 April, 2023 in India. Severe complications were rare in the control arm, with 16 (0·5%) events in 1–59 days, 77 (0·1%) in 2–59 months. No significant difference was observed in 1–59 days in the PO arm, with 27 events (0·7%, RD 0·2% [−0·2%; 0·5%]), but a slight increase was noted in 2–59 months, with 143 events (0·3%, adjusted RD 0·1% [0·0%; 0·2%]). No statistically significant differences were observed in the CDSA + PO arm, with 21 events (0·9%, RD 0·5% [−0·1%, 1·0%]) in 1–59 days, 128 (0·3%, adjusted RD 0·1% [−0·0%, 0·3%]) in 2–59 months. Day 0 hospitalisations with referral were very rare in the control arm, with 0 events (0·0%) in 1–59 days, 12 (0·0%) in 2–59 months. Arm comparisons were either not computable or not statistically significant, within the PO arm: 9 events (0·2%) in 1–59 days, 22 (0·0%, RD 0·0% [−0·0%, 0·1%]) in 2–59 months; in the CDSA + PO arm: 6 events (0·3%) in 1–59 days, 32 (0·1%, RD 0·0% [−0·0%, 0·1%]) in 2–59 months. **Interpretation**: When implemented in routine health systems at primary care level in India and Tanzania, contrary to expectations, pulse oximetry and CDSAs were not found to increase rates of hospitalization within 24 h of primary care referral, nor to decrease deaths, or delayed or un-referred hospitalisations. Wider health system challenges, including referral barriers, inequitable oxygen access and hospital care quality must be addressed if the potential of these tools in delivering child outcome benefits is to be realized.

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65. Binnerts, J.J., Hendriks, T.C., Meijer, M., *et al*… (2025). Improving interprofessional oral collaboration between formal healthcare workers and traditional bonesetters in resource-limited settings: evaluation of a pilot collaborative orthopedic trauma course in rural Tanzania. *BMC Medical Education*, Vol. 25(1). Doi:10.1186/s12909-025-07737-z.

Abstract

Background: High trauma rates and limited orthopaedic care services in low- and middle-income countries (LMICs) have led to reliance on traditional bonesetters (TBSs). Previous studies have set up formal training for TBSs to promote integration in the primary healthcare sector. However, the hierarchical structure of these initiatives poses the risk of alienating TBSs instead. Therefore, this study piloted a novel training strategy by assessing the feasibility of an orthopaedic trauma course, involving bilateral knowledge exchange between both formal healthcare workers (FHWs) and TBSs. **Methods:** In November 2024, TBSs and FHWs from Rorya district, rural Tanzania, attended a three-day basic trauma course, aimed at teaching basic extremity fracture care and enhancing collaboration. Data on demographics, pre- and post-course knowledge, changes in daily practice, and perspectives were collected through tests and interviews. **Results:** Fifteen FHWs and three TBSs participated in the training. Test results revealed a significant average increase in knowledge, from 79.1% pre-course to 86.5% directly post-course, which was maintained at 89.2% after 1-year post-course. In the interviews, most FHWs and TBSs noted changes in daily fracture care practice, the establishment of mutual understanding and respect, and supported expansion of the training course. **Conclusions:** The results support the notion that merged training of FHWs and TBSs can improve fracture care-related knowledge of trainees. Wide support was observed for increased collaboration between FHWs and TBSs, indicating that this type of training is feasible and could be expanded into more extensive, formalized programs. Future programs could benefit

from performing follow-up practical examinations for objective verification of practice changes, referral monitoring, and larger sample sizes.

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66. Bohren, M.A., Miller, S., Mammoliti, K.M., *et al*… (2025). Early detection and a treatment bundle strategy for postpartum haemorrhage: a mixed-methods process evaluation. *Global health,* Vol. 13(2). Doi:10.1016/s2214-109x (24)00454-6

Abstract

Background: Postpartum haemorrhage is a leading cause of maternal mortality. A multicountry, cluster-randomised trial (E-MOTIVE) demonstrated a 60% reduction in adverse postpartum haemorrhage outcomes. The E-MOTIVE intervention included early postpartum haemorrhage detection using calibrated blood-collection drapes, followed by a postpartum haemorrhage treatment bundle (i.e., uterine massage, oxytocics, tranexamic acid, intravenous fluids, examination and escalation [MOTIVE]), supported by implementation strategies. We report a mixed-methods process evaluation assessing the implementation of the E-MOTIVE intervention in Kenya, Nigeria, South Africa, and Tanzania. **Methods:** In this mixed-methods process evaluation, data sources were observations of health workers providing clinical care to pregnant women and pregnant people during vaginal birth and postpartum haemorrhage at intervention sites, and surveys and qualitative interviews with health workers at intervention and control sites. Intervention sites received the calibrated drapes, MOTIVE bundle, and implementation strategies and control sites used uncalibrated drapes. Primary implementation outcomes included fidelity, adoption, adaptation, acceptability, feasibility, and contamination to the calibrated drape, MOTIVE bundle, and implementation strategies. **Findings:** Between June 1, 2022, and Jan 31, 2023, 2578 births were observed, 295 pregnant women and people had postpartum haemorrhage, 47 qualitative interviews were done, and 889 surveys were completed. Fidelity to calibrated drape use was high (birth observations 2578 [100%] of 2578; survey 451 [98·3%] of 459). Among health workers, calibrated drape acceptability was high; however, they reported barriers to pregnant women's and people's acceptability. Fidelity to postpartum haemorrhage treatment bundle delivery was high (birth observations 286 [96·9%] of 295), with moderate to high fidelity in median time from postpartum haemorrhage diagnosis to final treatment initiation (≤15 min initiation time in 191 [66·8%] of 295 birth observations, 16–20 min in 42 [14·7%] birth observations), and high acceptability and feasibility. Research midwives participated in clinical assessments after birth and bundle delivery in some sites (mixed fidelity). **Interpretation:** This process evaluation shows generally high levels of fidelity, feasibility, and acceptability of the calibrated drape and treatment bundle across evaluation methods and countries. The E-MOTIVE intervention should be included in national policies, with consideration for health workforce, supplies, and medication issues, which might need addressing for successful implementation. **Funding:** The Bill and Melinda Gates Foundation and the UNDP–UNFPA–UNICEF–WHO–World Bank Special Programme of Research, Development and Research Training in Human Reproduction, a co-sponsored programme of WHO. **Translation:** For the Swahili translation of the abstract, see the Supplementary Materials section.

67. Boudreaux, C., Wroe, E.B., Thapa, A., *et al*… (2025). Organization of services for severe chronic Noncommunicable diseases at first-level hospitals in nine lower-income countries: Results from a Baseline assessment of PEN-Plus initiation. *PLOS Global Public Health*, Vol. 5(5). Doi: 10.1371/journal.pgph.0004552.

Abstract

Severe chronic noncommunicable diseases pose a significant health burden and challenges for health systems globally. This study aims to advance our understanding of the current organization of care for these conditions in low and lower-middle-income countries. The study was conducted as part of a baseline assessment of facilities prior to the initiation of the Package of Essential NCD Interventions -Plus (PEN-Plus) strategy, which is designed to enhance outpatient care for conditions including rheumatic and congenital heart disease, sickle cell disease, type 1 diabetes, severe asthma, and advanced chronic kidney disease. We employed a cross-sectional survey methodology to collect baseline data from 16 hospitals in nine LLMICs. The survey assessed the organization of common and severe NCD services, focusing on the availability and management of severe NCDs, organized into domains of integrated services. Data were analyzed using summary statistics and heatmaps to evaluate care patterns. We document gaps in the availability of services for both common and severe NCDs. We find that the majority of NCD care occurs in the general outpatient settings, with a smaller proportion provided in specialized internal medicine wards. Despite some hospitals implementing specialized clinics and teams, limitations in specialist access, variability in service fees, and inconsistent definitions of patient follow-up were prominent issues affecting patient care access and continuity. Despite the spectrum of strategies employed by these hospitals to cater to chronically and severely ill patients, notable gaps in care persist, particularly for diagnostic and treatment options that require specialist training or equipment. The sustainable decentralization of effective care for individuals with severe chronic NCDs will require integrated teams and customized systems to ensure seamless and comprehensive care through the entire care continuum—from screening and diagnosis to care linkage, ongoing management, handling of complications, uninterrupted supply of medicines and commodities and maintaining patient retention.

68. Bowah, C.S., Nhungo, C.J., Mavundla, J.A., *et al*... (2025). Management of advanced gallbladder adenocarcinoma: A case report and review of treatment strategies. *International Journal of Surgery Case Reports*, Vol. 127. Doi: 10.1016/j.ijscr.2025.110965

Abstract

Introduction and importance: Gallbladder cancer (GBC) is a rare but aggressive malignancy, accounting for most biliary tract cancers. It typically presents at an advanced stage, leading to a poor prognosis, with a mean survival of six months and a five-year survival rate of 17.6 %. Early detection is critical due to its insidious onset and rapid progression. **Case presentation:** We report a case of a 46-year-old African male who presented with a two-week history of colicky abdominal pain. Diagnostic imaging revealed a gallbladder mass, and the patient underwent surgical resection followed by adjuvant therapy. Postoperative recovery was initially satisfactory; however, 18

months later, the patient developed peritoneal carcinomatosis and succumbed to the disease. Clinical discussion: This case highlights the challenges of managing GBC in resource-limited settings, where late-stage presentation is common. Early surgical intervention remains the mainstay of potentially curative treatment. Adjuvant therapies may improve outcomes but are often less effective in advanced disease stages. **Conclusion:** Early detection and surgical management are pivotal for improving survival outcomes in gallbladder cancer. This case emphasizes the need for heightened clinical awareness and improved diagnostic capabilities in resource-constrained environments.

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69. Brand, C.O., Ishungisa, A.M., Kilgallen, J.A., *et al*… (2025). The social performance of gender roles: men report lower support for women's empowerment when in front of their peers. *Philosophical Transactions B,* Vol. 380(1940). Doi:10.1098/rstb. 2024.0267

Abstract

Background: Beliefs about gender roles are widely understood to be acquired via social learning. However, accounts of gender socialization remain disconnected from a growing literature on evolved social learning strategies. We implemented a novel field experiment to elucidate how social information on gender is produced and transmitted among young men in an urbanizing Tanzanian community. Men interviewed in front of their peers reported lower support for women's empowerment compared to men interviewed privately. We interpret this finding as indicative of men modifying or strategically misrepresenting beliefs to match an assumed lack of support for women's empowerment among their peers. We also found that men interviewed in front of community elders, assumed to hold relatively patriarchal beliefs, reported relatively low support for women's empowerment. However, contrary to our expectations, men interviewed in the presence of highly educated urban men, assumed to be more supportive of women's empowerment, also reported lower support than when interviewed privately. Supporting qualitative data suggests that our assumptions about our comparison groups may be somewhat naive, with participants emphasizing similarity rather than differences between themselves and those from the city. We discuss the implications of our results for our understanding of gender socialization from a cultural evolution perspective. This article is part of the theme issue 'Transforming cultural evolution research and its application to global futures'.

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70. Brandts, J., Barkas, F., Bacquer, D.D., *et al*… *(*2025). International patterns in lipid management and implications for patients with coronary heart disease: results from the INTERASPIRE study *Open Access. European Journal of Preventive Cardiology.* Doi:10.1093/eurjpc/zwaf388.

Abstract

Aims: To quantify international variations in lipid-lowering therapies (LLT) use among patients with coronary heart disease (CHD) and attainment of European guideline-recommended lipid goals. **Methods and results:** INTERASPIRE is an observational study (2020–23) covering 14 countries from all WHO regions. Patients (18–79 years) hospitalized in the preceding 6–36 months with CHD were invited for standardized interviews and examination, with central laboratory

analyses for low-density lipoprotein cholesterol (LDL-C), non-HDL-C, and apolipoprotein B (apoB). Valid lipid data meeting quality control standards were available from 13 countries. Lipid goals followed the 2019 guidelines of the European Atherosclerosis Society and the European Society of Cardiology: LDL-C < 1.4 mmol/L, non-HDL-C < 2.2 mmol/L, and apoB <65 mg/dL.Among 4061 patients (78.8% male, mean age 60.3 years), between index event and interview, 66.3% had no change in treatment intensity. LLT use at interview was largely statin monotherapy: 49.6% high-intensity (inter-country range 5.3%–77.3%) and 24.1% low/moderate-intensity (inter-country range 5.1%–70.1%). Otherwise, 12.2% (inter-country range 0.2%–41.1%) were on combination therapy, and 12.7% on no LLT (inter-country range 3.5%–36.7%). Goal attainment for LDL-C was 17.5%. Corresponding non-HDL-C and apoB goals were achieved by 29.9% and 29.2%, respectively. Higher-income countries (defined by the World Bank's 2024–25 classification of income levels) did better in goal attainment than lower-middle-income countries. **Conclusion:** In this international study, contemporary lipid goals were not achieved in most CHD patients, with lower-middle-income countries having the worst goal attainment. Contributory factors include absence of any LLT use, low use of combinations and a failure to up-titrate LLT to achieve guideline targets.

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71. Brashi, B., Mlugu, E.M., Kaale, E.A. *et al*… (2025). Evaluation of physicochemical parameters of selected Clotrimazole pessaries from pharmaceutical importers and Accredited Drug Dispensing Outlets in Dar es Salaam, Tanzania. *medRxiv,* Vol. 2025(01). Doi:10.1101/2025.01.21.25320887

Abstract

Introduction: Quality assured medicines make an important contribution to a global reduction in morbidity and mortality. Tanzania depends on approximately 70% of imported medicines, some of which are manufactured in countries with different climatic zones for stability. The prevalence of vaginal candidiasis amongst women seeking primary health care for genital infections in Dar es Salaam is 45%. Clotrimazole pessaries are the first-line drug for the treatment of vaginal candidiasis (VC). However, their reports show the existence of poor quality clotrimazole in the market as well as microbial resistance. Study **objectives:** This study aimed to assess the quality of clotrimazole pessaries among pharmaceutical importers and Accredited Drug Dispensing Outlets (ADDOs) in Dar es Salaam. **Methods:** The experimental study, laboratory-based, was conducted between October 2021 and July 2022. A total of 72 samples, 5 from pharmaceutical importers and 67 from ADDO outlets, were collected by mystery clients through the convenient method. Assay for the content of active ingredients and disintegration time was performed as described in the British Pharmacopoeia (BP). **Results:** All samples passed the physical inspection and disintegration test. Among the collected samples, two of 72(2.78%) failed the assay test. The assay for an active pharmaceutical ingredient for samples from importers was significantly greater than that from ADDO outlets. **Conclusion:** Storage conditions may affect the drug content of clotrimazole pessaries. A few samples from ADDO without fan failed to meet the assay test as per British Pharmacopoeia specification. **Recommendations:** The Pharmacy Regulation 2019, for Accredited Drugs, Dispensing Outlets, Standards, and Ethics for Dispensation of Medicines to be revitalized to include a specification on ADDO outlets regarding the storage conditions to align

with the pharmaceutical manufacturer's recommendations. Also, regulatory inspections should be emphasized by the Regulatory Authority, including the Pharmacy Council and TMDA, so as to ensure the registered pharmaceutical outlets continue complying with standards required, like the presence of air conditioning, so that the medicines continue to be of desired quality throughout their shelf life.

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72. Budodo, R., Mandai, S.S., Bakari, C., *et al*… *(*2025). Performance of rapid diagnostic tests, microscopy, and qPCR for detection of Plasmodium parasites among community members with or without symptoms of malaria in villages located in North-western Tanzania. *Malaria Journal*, Vol. 24(1). Doi:10.1186/s12936-025-05361-2.

Abstract

Background: Despite the implementation of different control interventions, *Plasmodium* parasite infections in the communities (among asymptomatic and symptomatic individuals) still play a crucial role in sustaining malaria transmission. This study evaluated the performance of rapid diagnostic tests (RDTs), microscopy, and quantitative PCR (qPCR) in detecting *Plasmodium* parasites among community members in five villages of Kyerwa district, Kagera region in north-western Tanzania. **Methods**: The study used samples and data collected during a community cross-sectional survey of asymptomatic and symptomatic participants (n = 4454) aged ≥ 6 months which was conducted in July and August 2023. *Plasmodium* parasites were detected using RDTs, microscopy, and qPCR (targeting 18S rRNA gene). The performance of RDTs and microscopy was assessed by sensitivity, specificity, and predictive values, using qPCR as the reference method. Factors affecting the accuracy of these methods were determined using a multivariate logistic regression model. **Results:** The prevalence of *Plasmodium* parasite infections among 4454 participants was 44.4%, 32.1%, and 39.8% by RDTs, microscopy, and qPCR, respectively. The prevalence of *Plasmodium falciparum*, *Plasmodium malariae* and *Plasmodium ovale* mono-infection by microscopy was 28.7%, 0.2%, and 0.3%, while by qPCR it was 35.3%, 0.4% and 0.5%, respectively. The geometric mean parasite densities (GMPDs) by microscopy were 642 (95% confidence intervals (CI) = 570–723), 126 (95% CI = 98–162), and 124 (95% CI = 82–160) asexual parasites/µL for *P. falciparum, P. ovale spp.*, and *P. malariae*, respectively. By qPCR, the GMPDs were 1180 (95% CI = 1032–1349) parasites/µL for *P. falciparum,* 44 (95% CI = 32–61) for *P. ovale* spp., and 50 (95% CI = 29–89) for *P. malariae*. The sensitivity and specificity of RDTs were 94.0% (95% CI = 92.8–95.1%) and 87.5% (95% CI = 86.2–88.7%), respectively, whereas those of microscopy were 74.6% (95% CI = 72.5–76.6%) and 95.2% (95% CI = 94.3–96.0%), respectively. The sensitivity of RDTs, and microscopy was low at very low parasitaemia (< 100 parasites/µL) but increased significantly with increasing parasitaemia, reaching ≥ 99.6% at > 10,000 parasites/µL ($p < 0.001$). **Conclusion:** High prevalence of *Plasmodium* parasites was detected, and the performance of RDTs and qPCR was comparable, but microscopy had lower performance. Higher sensitivity of RDTs compared to microscopy indicates that RDTs are effective for detection of infections caused by *Plasmodium* parasites in routine case management and surveillance in this area with confirmed artemisinin partial resistance (ART-R).

73. Bukini, D., Rifai, A., Kanza, C., *et al*… (2025). Strengthening advanced therapy for sickle cell disease in Africa: experience from the Sickle Cell Disease Centre in Dar es Salaam, Tanzania. *BMJ*, Vol. 10(1).

Abstract

Despite progress in healthcare services for individuals living with sickle cell disease (SCD) in Africa, substantial gaps remain in advanced treatments for SCD. To help address this burden, Tanzania has established one of the largest single-centre SCD programmes in the world and developed an advanced therapy programme for SCD focused on patient engagement and advocacy, clinical activities involving exchange blood transfusion (ExBT) and haematopoietic stem cell transplant (HSCT), gene therapy (GT) preparedness, and enabling partnerships. This report describes the programme's genesis, structure and progress achieved. Patient engagement camps and patient-focused workshops conducted since early 2021 have involved more than 150 patients, family caregivers and healthcare providers. A patient registry was established by screening 1500 patients eligible for advanced therapies with 157 identified to benefit from advanced treatments for SCD. Out of which 22 patients received ExBT, and human leucocyte antigen typing was conducted on 127 individuals to establish a registry of family members with potential to be HSCT donors. Target product profiles were devised for minimum and optimum criteria of GT products to guide drug discovery and development efforts, and qualitative research was conducted to investigate factors anticipated to influence successful adoption of GTs for SCD in Africa. The programme's multifaceted components have been enabled by institutional networks and collaborations established at national, regional and global levels. The programme presented opportunities to deliver cost-effective advanced treatment and curative options for SCD in Tanzania and lessons learnt may be applicable to inform similar efforts in other African regions where SCD is highly endemic.

74. Bundala, F.A., Kamala, B.A., Moshiro, R., *et al*… (2025). Availability and functioning of neonatal care units and neonatal mortality across five regions in Tanzania: a baseline cross-sectional study in 127 CEmONC health facilities. *BMJ*, Vol 10(5). Doi:10.1136/bmjgh-2024-018758

Abstract

Background: The neonatal mortality rate in Tanzania has remained persistently high, at 24 deaths per 1000 live births. To halve the current death rate by 2030, the WHO recommends that by 2025, at least 80% of districts should have a neonatal care unit (NCU) and use a continuous positive airway pressure (CPAP) device for respiratory support, among small and sick newborns. This study describes the availability and functioning of NCUs and facility-based neonatal mortality in Tanzania. **Methods:** From December 2020 to March 2021, a cross-sectional study was conducted in 127 health facilities in five regions. Data were collected using structured checklists. The presence of a neonatal intensive care unit or a high dependency unit, a kangaroo mother care ward and a general neonatal ward defined a minimum national NCU recommendation. The presence of one or more admission beds and a neonatal CPAP in the established NCU described the functioning. **Results:** Of all health facilities providing comprehensive emergency obstetric and

newborn care services, 48% (61/127) had established an NCU. Only 3% (4/127) met the minimum national NCU recommendation. NCUs were significantly less available in health centres and district hospitals than in regional referral hospitals ($p<0.001$), and less in public and private facilities than in faith-based organisations ($p = 0.001$). Moreover, only 31% (40/127) of facilities had at least one neonatal admission bed, and 3% (4/127) had a neonatal CPAP in the NCU. Besides, 75% (30/40) of the functioning NCUs, had one to four beds only. Only 17% (22/127) of facilities had a neonatal admission register. Neonatal admissions and deaths were significantly lower in facilities without functioning NCUs and admission registers ($p<0.008$, 0.001, respectively). The early (0–7 days) neonatal mortality accounted for 96% (529/550) of registered neonatal deaths. **Conclusions:** Health facilities with functioning NCUs are scarce, with few admission beds and CPAP devices. The lack of admission registers implies a significant under-reporting. Tanzania needs to improve the availability of functioning NCUs, with adequate admission beds and equipment to end preventable neonatal deaths, as per global targets, by 2030

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75. Carey-Ewend, K., Marten, A., Muller, J., *et al*… (2025). Seasonal variation and interspecies dynamics among Plasmodium falciparum and ovale species in Bagamoyo, Tanzania. *The Journal of Infectious Diseases*, Vol. 233(2). Doi:10.1093/infdis/jiaf498.

Abstract

Background: Malaria control in sub-Saharan Africa is typically focused on Plasmodium falciparum (Pf), but non-falciparum species like P. ovale curtisi (Poc) and P. ovale wallikeri (Pow) appear to be rising in prevalence, especially in parts of East Africa. **Methods:** We conducted polymerase chain reaction (PCR)-based screening of 7173 asymptomatic individuals over 5 years of age in coastal Tanzania from 2018–2022, employing real-time 18S rRNA PCR assays for P. falciparum and P. ovale, followed by Poc/Pow detection. Plasmodium positivity was compared across seasons and demographic groups, and interactions between species were analyzed via binomial regression. **Results:** Plasmodium falciparum infection (prevalence 27.4%) was associated with younger age, male sex, and higher recent cumulative rainfall, whereas these associations were not apparent for P. ovale (Po, prevalence 11.5%). P. ovale infections appeared to peak during months with lower Pf prevalence, especially during the long-wet season, when Po mono-infections predominated and fewer Pf-Po co-infections were detected than expected by independent assortment. This apparent antagonism was reversed during the short-wet season: Pf-Po co-infections were comparatively enriched despite low overall Po prevalence. In contrast, excess mixed Poc/Pow infections were detected across all seasons, composing 23% of the Po-positive isolates in which a specific Po species could be detected. **Conclusions:** The epidemiology of P. ovale species in coastal Tanzania suggests they are frequently present when P. falciparum recedes, but also co-infect the same hosts during the short-wet season. Meanwhile, the individual Poc and Pow species often co-exist within individuals, perhaps due to co-transmission or concurrent relapse.

76. Carneiro, L.C., Tekka, R.S. (2025). Root Morphology of First Permanent Molars Extracted from Adult Dental Patients of Similar Ethnicity in Dar-Es-Salaam, Tanzania. *International Journal of Dentistry,* Vol. 2025(1). Doi:10.1155/ijod/2531403.

Abstract

Background: Root morphology of first permanent molars has been reported to be complex and associated with ethnicity, age, and gender. **Objective:** To assess the external and internal root morphology of first permanent molars extracted from dental patients of similar ethnicity in Dar es Salaam, Tanzania. **Methodology:** This descriptive cross-sectional study assessed the external and internal root morphology of first permanent molars extracted from adult patients attending dental clinics in Dar es Salaam. External morphology was visually assessed for root separation or fusion. Separated roots were assessed for the presence and direction of curvature using a graph paper with a drawn vertical and horizontal grid. Computed tomography scanning assessed the internal morphology of teeth embedded in wax blocks. Using transverse slice images at the level of the pulp floor, the number and distance between canal orifices in a root were assessed. Data were analyzed descriptively. For associations, a p-value of <0.05% and 95% confidence intervals were used. **Results:** Of the 384 extracted teeth, 275 (71.6%) fulfilled the inclusion criteria. The majority (64.2%) of mandibular molars were extracted from patients aged 18–40 years (70.6%) and females (57.6%). Three (91.2%) and two (98.0%) separated roots were observed in maxillary and mandibular molars, respectively. Distal curvature of maxillary mesiobuccally root (52.0%) was statistically significantly related to age. Mandibular mesial (83%) roots were curved buccally ($p > 0.05$). Maxillary mesiobuccally and mandibular mesial roots showed a higher proportion of two canal orifices with a mean distance of 0.11–0.39 mm between orifices. **Conclusion:** The majority of maxillary and mandibular first permanent molars from Tanzanian adult dental patients had an external morphology of three and two separated roots, with distal curvature of mesiobuccally roots of maxillary molars being statistically significantly related to age. The internal morphology of maxillary mesiobuccally and mandibular mesial roots showed higher proportion of two canal orifices with mean distance varying between 0.11- and 0.39-mm. Variations in root morphology were not related to sex.

77. Celestina, S.F., Salome, M.M., Fidelis, L.M., *et al*… (2025). Balancing Specialism with Holistic Care: Challenges for Nurses in Managing Comorbidities of Hypertension and Diabetes in Orthopaedic Wards in Tanzania. *Tanzania Medical Journal,* Vol. 36(4). Doi:10.4314/6t8f4d58

Abstract

Background: The greater prominence of hypertension and diabetes in the Tanzanian population poses challenges for nursing care in hospital settings because of the increased likelihood of comorbidities among in-patients. Comorbidity refers to one or more conditions that exist during the clinical care of a patient who has a specific injury or disease as the presenting condition. This study looks at nursing care in orthopaedic in-patient wards where many patients also have high blood pressure and diabetes. Nurses spend more time with patients than other health workers and thus are better informed about patients' overall health during hospital stays. Through interviews

with nurses, this study explores how the hospital's focus on orthopaedic care impacts on the nursing care also needed to manage hypertension and diabetes among patients in the wards. **Objective:** To investigate nurses' experiences in balancing orthopaedic care of hospitalised patients with also caring for those patients with diabetes and hypertension and to enlist their suggestions and recommendations as professionals on how to adopt a more holistic approach to the care of these patients. **Methodology:** A qualitative exploratory research design was used. In-depth interviews with ten registered nurses on orthopaedic wards explored their experiences of caring for orthopaedic in-patients with comorbidity conditions of hypertension or diabetes. Purposive sampling was used to recruit nurses from male and female general wards. Based on in-depth reading of the English language transcripts, open coding of responses generated an initial set of codes. These were then grouped systematically into broader themes presenting evidence on the nature and sources of nursing challenges, implications for patients, and nurses' proposals for improvement. **Results:** Key problems identified include: poor teamwork in the flow of information and communication between nurses and between nurses and other healthcare workers; deficiencies in the availability of functioning essential equipment and consumable and lack of training about comorbidities; and patients' limited knowledge about their condition and medications. These challenges reinforce each other and amplify work pressure on nurses. This results in poorer health outcomes, delayed surgeries, prolonged wound healing, extended hospital stay, and increased mortality rates among patients with comorbidity. **Conclusions and recommendations:** This study concludes that moving from specialist towards more holistic care requires a systemic change at hospital level towards more effective team work and collaboration in information sharing between doctors, nurses and patients. This requires not only changes in the nursing process itself, but also in the overall approach to patient care.

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78. Celina, F.M., Zayd, M.S., Paul, N., *et al*… (2025). Indications and Visual Outcomes of Corneal Transplant Surgery in Tanzania. *Tanzania Medical Journal*, Vol. 36 (4). Doi: 10.4314/28py6e41

Abstract

Background: Corneal diseases are among the major causes of visual impairment and blindness worldwide, after cataract and glaucoma. They account for approximately 7% of all blindness worldwide. Corneal transplantation, an operation that replaces diseased corneal tissue with a healthy donor cornea, is increasingly in demand. Current information on corneal transplant indications, outcomes, and associated factors is crucial for planning corneal transplant services in resource-limited settings like Tanzania. **Aim:** To determine the indications, visual outcomes, and associated factors among patients who underwent corneal transplant at tertiary eye units in Tanzania. **Methods:** A hospital-based retrospective review and analysis of clinical records of all patients who underwent corneal transplant between January 2018 and September 2021 at Dr. Agarwals Eye Hospital and Kilimanjaro Christian Medical Centre. The data was extracted by a data collection tool from the case notes. Descriptive and logistic regression analyses were conducted using Statistical Package for Social Sciences version 23. **Results:** Out of 98 patients who had undergone corneal transplant at the two eye departments, 58% were males. The median recipient age was 22 (IQR 17, 38) years. Keratoconus was the most common indication 58

(54.7%), followed by central corneal scar 19 (17.9%), and bullous keratopathy 10(9.4%). Preoperatively, 77.4% of eyes were blind, and none had normal vision. Postoperatively, 44.3% achieved normal best corrected vision at 6 months post-transplant. Patients with keratoconus (aOR: 0.032, 95% CI: 0.058-0.945, p = 0.035) and participants aged ≤ 40 years (aOR: 0.019, 95% CI: 0.001-0.452, p=0.014) were less likely to have poor visual outcome while presence of postoperative complications (aOR: 3.632, 95% CI: 1.107-11.915, P = 0.033) and postoperative increased intraocular pressure (aOR: 1.193, 95% CI 0.294-0.848, p = 0.025) were associated with poor visual outcomes. **Conclusion and recommendation:** Keratoconus is the leading indication for corneal transplant. Vision improved significantly following corneal transplantation; however, postoperative complications and increased intraocular pressure were associated with poor visual outcomes. There is a need to establish more corneal transplant services, as they have shown satisfactory outcomes in our setting.

Keywords: *Corneal transplant, Penetrating Keratoplasty, Indications, Visual outcome*

79. Chacha, G.A., Francis, F., Mandai, S.S., *et al*... (2025). Prevalence and drivers of malaria infection among asymptomatic and symptomatic community members in five regions with varying transmission intensity in mainland Tanzania. *Parasites & vectors*, Vol. 18(24. Doi:10.1186/s13071-024-06639-1.

Abstract

Background: Despite implementation of effective interventions in the past two decades, malaria is still a major public health problem in Tanzania. This study assessed the prevalence and drivers of malaria infections among symptomatic and asymptomatic members of selected communities from five regions with varying endemicity in mainland Tanzania. **Methods:** A cross-sectional community survey was conducted in five districts, including one district/region in Kagera, Kigoma, Njombe, Ruvuma and Tanga from July to August 2023. Participants aged ≥ 6 months were recruited and tested using rapid diagnostic tests (RDTs). Demographic, anthropometric, clinical, parasitological, type of house, and socio-economic status (SES) data were captured using structured questionnaires. Associations between parasite prevalence and potential drivers were determined by logistic regression, and the results were presented as crude (cOR) and adjusted odds ratios (aOR), with 95% confidence intervals (CIs). **Results:** Among 10,228 individuals tested, 3515 (34.4%) had positive results by RDTs. The prevalence of malaria varied from 21.6% in Tanga to 44.4% in Kagera, and from 14.4% to 68.5% among the different villages ($P < 0.001$). The odds of malaria infections were higher in males (aOR = 1.32, 95% CI 1.19–1.48, $P < 0.001$), under-fives (aOR = 2.02, 95% CI 1.74–2.40, $P < 0.001$), schoolchildren [aged 5–9 years (aOR = 3.23, 95% CI 1.19–1.48, $P < 0.001$) and 10–14 years (aOR = 3.53, 95% CI 3.03–4.11, $P < 0.001$)], and non-bednet users (aOR = 1.49, 95% CI 1.29–1.72, $P < 0.001$). Individuals from households with low SES (aOR = 1.40, 95% CI 1.16–1.69, $P < 0.001$), or living in houses with open windows (aOR = 1.24, 95% CI 1.06–1.45, $P < 0.001$) and/or holes on the walls (aOR = 1.43, 95% CI 1.14–1.81, $P < 0.001$) also had higher odds. **Conclusions**: Malaria prevalence varied widely across regions and villages, and the odds of infections were higher in males, schoolchildren, non-bednet users, and individuals with low SES or living in houses with open windows and/or holes on the walls. The

identified vulnerable groups and hotspots should be targeted with specific interventions to reduce the disease burden and support the ongoing malaria elimination efforts in Tanzania.

80. Chacky, F., Hicks, J.T., Remiji, M.J., *et al*… *(*2025). Trends in malaria prevalence among school-age children in Mainland Tanzania, 2015–2023: A multilevel survey analysis. *PLOS Global Public Health*, Vol. *5*(4). Doi.10.1371/journal.pgph.0004386

Abstract

In high-transmission areas, school-aged children have higher malaria prevalence and contribute significantly to the transmission reservoir. Malaria infections can be asymptomatic or present with symptoms which may contribute to anaemia, severe illness and fatal malaria. This analysis provides trends of malaria prevalence and associated risk factors among school-aged children in mainland Tanzania. Data for this analysis were obtained from nationwide school malaria surveillance conducted every other year from 2015 to 2023. A total of 307,999 school children aged 5–16 years old from 850 public primary schools were tested for malaria infection using rapid diagnostic tests, assessed for malaria control intervention coverage and other malaria-related parameters. A multilevel mixed-effects logistic regression model was used to assess associated risk factors. Overall malaria prevalence was 21.6% (95%CI: 21.3–22.0) in 2015 which progressively decreased to 11.8% (95%CI: 11.5–12.0 p <0.001) in 2021 with no significant change in the overall malaria risk between 2021 and 2023 (AOR 1.32, CI: 0.92–1.81, p=0.08). School children aged between 9–12 years and 13–16 years had 20% higher risk of malaria (95% CI: 1.15–1.25) and 21% higher risk of malaria (95% CI: 1.16–1.27), respectively, compared to those aged between 5–8 years. Geographically, children from the Lake zone had the highest odds of prevalence (AOR: 18.75; 95% CI: 12.91–27.23) compared to the Central zone, and sleeping under an insecticide-treated net demonstrated a protective effect (AOR=0.68, 95%CI: 0.64–0.72, p < 0.001). There was a significant decline in the prevalence of malaria infection across the study period. We presented a countrywide active surveillance data, collected over time and in different settings which are unique and seldom presented. We believe various stakeholders will use our findings and join force to combat malaria not just in Tanzania but, in all malaria endemic countries.

81. Chale, P., Moledina, S.M., Nsato, S.B., *et al*… (2025). Isolated unilateral absence of pulmonary artery presenting as hemoptysis: A case report. *Respiratory Medicine Case Reports*, Vol. 55. Doi: 10.1016/j.rmcr.2025.102228.

Abstract

A middle-aged female was reviewed at the gynecology ward due to worsening dyspnea after surgery. She was incidentally found by computed tomography to have an isolated unilateral absence of the pulmonary artery. Echocardiography revealed pulmonary hypertension and no other congenital cardiac anomalies. Pharmacotherapy was initiated, and she showed a good response to the treatment.

82. Challe, D.P., Petro, D.A., Francis, F., *et al*…(2025). Trends of malaria prevalence among individuals from rural communities in three regions with varying transmission intensities in Mainland Tanzania; Data from 2021-2023 community cross-sectional surveys. *medRxiv*. Doi:10.1101/2025.02.13.25322171

Abstract

Background: Recent reports showed the persistence of malaria transmission and disease burden in rural communities, which has limited the impact of ongoing control and elimination strategies. This study investigated the trends of malaria prevalence among community members from three regions of Mainland Tanzania with varying transmission intensities. **Methods:** Community surveys were conducted from 2021 to 2023 and involved individuals aged ≥6 months in three regions: Kigoma and Ruvuma (with high malaria transmission intensities) and Tanga (moderate transmission). Interviews were conducted using structured questionnaires to collect anthropometric, clinical, parasitological (testing for malaria using rapid diagnostic tests (RDTs), type of house, and socio-economic status (SES) data. Modified Poisson regression was used to identify factors associated with malaria infections, and the results were presented as crude (cPR) and adjusted prevalence ratios (aPR). **Results:** Malaria infections by RDTs were detected in 1,896 (23.2%, n=8,166) individuals, with significant variations across regions and years (22.9% in 2021, 20.6% in 2022, and 26.9% in 2023; p<0.001). The highest prevalence of malaria infections was in Kigoma in 2023 (35.6%), while the lowest was in Tanga in 2022 (10.5%). School children (5 – <15 years) had significantly higher prevalence (38.2% in 2021, 26.2% in 2022, and 34.4% in 2023 (p<0.001) as did males (26.7% in 2021, 25.4% in 2022, and 31.2% in 2023, p<0.001). Higher likelihood of malaria infections was in school children (aPR: 1.94, 95% CI: 1.67 – 2.25, p<0.001), males (aPR=1.24 95%CI: 1.14–1.34, p<0.001), individuals living in traditional houses (aPR=1.14, 95% CI: 1.01 – 1.28, p = 0.037), among individuals with moderate (aPR=1.27, 95% CI: 1.13 – 1.43, p<0.001) or low SES (aPR = 1.39, 95% CI: 1.24 – 1.55, p<0.001), and those with fever at presentation (axillary temperature ≥37.5°C; aPR = 1.34, 95% CI: 1.09 – 1.64, p = 0.005) or fever history within 48 hours before the survey (aPR = 3.55, 95% CI: 3.26–3.87, p<0.001). The likelihood of infections was also higher in Ruvuma (aPR=1.98, 95%CI: 1.77–2.21, p<0.001) and Kigoma (aPR=1.28, 95%CI: 1.15–1.42, p<0.001) regions compared to Tanga. The likelihood of malaria infections was similar among participants based on bed net ownership (aPR: 1.27, 95%CI: 0.80 – 2.01, p = 0.306) or use (aPR: 1.01, 95%CI: 0.64 – 1.50, p=0.920). **Conclusion:** The study showed spatial and temporal variations of malaria prevalence, with the highest prevalence in 2023 and the lowest in 2022. Groups at higher risk of malaria infections included school children, males, participants with fever, low or moderate SES, and those who lived in traditional houses. Targeted interventions are urgently needed for areas with persistently high transmission and vulnerable groups, particularly in rural communities.

83. Chamba, C., Jennings, D., Shungu, R., *et al*… (2025). Targeted Next-Generation Sequencing of Cell-Free DNA to Detect MYC-Immunoglobulin Translocation and Epstein-Barr Virus DNA in Plasma of Burkitt Lymphoma Patients in East Africa. *JCO Global Oncology*, Vol. 11 (2400210). Doi:10.1200/go.24.00210

Abstract

Purpose: Epstein-Barr virus (EBV)–positive Burkitt lymphoma (BL) affects children in sub-Saharan Africa, but diagnosis via tissue biopsy is challenging. We explored a liquid biopsy approach using targeted next-generation sequencing to detect the MYC-immunoglobulin (MYC-Ig) translocation and EBV DNA, assessing its potential for minimally invasive BL diagnosis. **materials and methods:** The panel included targets for the characteristic MYC-Ig translocation, mutations in intron 1 of MYC, mutations in exon 2 of MYC, and three EBV genes: EBVencoded RNA (EBER)1, EBER2, and EBV nuclear antigen 2. It was first tested in a small derivation cohort of four recharacterized BL-derived cell lines with known translocation status and eight recharacterized plasma samples with known EBV DNA status by quantitative polymerase chain reaction (qPCR). These different data modalities were combined to assess the accuracy of this approach in the diagnosis of BL in 20 patient plasma samples in Tanzania and Uganda. **Results:** The next-generation sequencing panel detected three of four MYC-Ig translocations in the BL-derived cell lines. EBV viral load by targeted sequencing correlated strongly with qPCR results (Spearman's rho 5 0.94) in recharacterized plasma samples. Using the patient plasma samples, mutations in MYC intron 1 were associated with the presence of a MYC translocation with 25 or more mutations being predictive of a translocation with AUC, sensitivity, and specificity of 1. Overall, liquid biopsy parameters associated with a diagnosis of BL ($P < .05$) included cell-free DNA concentration, circulating tumor DNA concentration, MYC intron 1 mutations, MYC-Ig translocation, and autosome entropy. Integrating these parameters into a diagnostic model demonstrated excellent performance with an AUC of 0.95, sensitivity of 0.9, and specificity of 1. **Conclusion:** This analysis demonstrates the potential of liquid biopsy to improve BL diagnosis in settings with limited pathology resources. Validation of our approach in a larger data set is needed.

84. Charles, S.K., Ally, A.L., Lilian, T.M., *et al*… (2025). Women's Quality of Life after Obstetric Fistula Repair in Tanzania. *Tanzania Medical Journal*, Vol. 36(3). Doi:10.4314/2jhvwg93

Abstract

Background: Obstetric fistula is a significant public health problem that causes severe physical, psychological, and social challenges, resulting in a poor quality of life for affected women. Surgical repair is intended to restore their health and well-being. This study explores the lived experiences of women concerning their quality-of-life following fistula repair in Dar es Salaam, Tanzania**. Methodology:** Data was collected using a semi-structured interview guide with ten purposively recruited women who had undergone obstetric fistula repair after six months of treatment in Dar es Salaam. Qualitative content analysis was conducted using a deductive approach for pre-determined codes, and later an inductive method was conducted to capture any new emerging codes. The research study was approved by the Institutional Review Board of the

Muhimbili University of Health and Allied Sciences. **Results:** Following surgical treatment, the women recovered from leaking urine and associated odors, enabling them to resume their social, religious and economic activities. Although some women were afraid to be remarry due to mistrust and the fear of the fistula redeveloping, others were able to marry and have children after the repair. Successful fistula treatment dramatically improved the women's quality of life. **Conclusion:** Obstetric fistula treatment led to a marked improvement in women's quality of life. Successful repair enabled them to regain physical strength, resume sexual relations and childbirth, and reintegrate into social and economic life. Increased community awareness of the treatment's advantages contributed to the enhanced well-being of these women.

Keywords: *Obstetric fistula repair, Quality of life, Experience after repair, Tanzania*

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85. Chen, C., Xue, H., Horsburgh, C.R., *et al*… (2025). Trajectories of interferon-gamma release assay results over 2 years in independent cohorts from China, South Africa, Tanzania, and the United States. *Chest*, Vol. 168(1). Doi: 10.1016/j.chest.2025.01.031

Abstract

Background: There is an ongoing debate about whether clearance of Mycobacterium tuberculosis infection occurs and at what magnitude. Recent studies quantifying "uncertainty zones" of interferon-gamma release assays (IGRAs) provide a more stringent estimate of reversion. **Research Question**: When accounting for uncertainty zones through stringent cutoffs, what are the trajectories of IGRAs results over 2 years of testing? **Study Design and Methods**: Five cohorts from South Africa, China, Tanzania, and the United States tested with an IGRA 3 or more times were followed up for stringent conversion and reversion. The annual risk of IGRA reversion was assessed following an IGRA conversion and among those with baseline positivity. **Results:** A total of 26,596 IGRA measurements were taken over 13,593 years of follow-up (Nparticipants = 7,683). Stringent reversion at year 2 following stringent conversion at year 1 varied between cohorts, occurring in 48% (43/90) for Wantai, 37% (22/59) for QuantiFERON, and 17% (2/12) for T-SPOT.TB, respectively. In the US cohorts, stringent reversion at year 1 following stringent conversion at 6 months was 58% (15 of 26) for QuantiFERON and 18% (12 of 60) for T-SPOT.TB. Stringent reversion at 1 year following baseline positivity occurred in 12% (47 of 404) for Wantai, 21% (10 of 48) for QuantiFERON, and 44% for T-SPOT.TB (45 of 102). In one cohort from China (N = 399; age range, 59 years [interquartile range, 48-67 years]), IGRA reversion was more common in younger participants (adjusted OR [aOR], 0.95; 95% CI, 0.93-0.97) and those without recent close TB exposure (aOR, 0.35 [95% CI, 0.11-1.03] in South Africa; aOR, 0.10 [95% CI, 0.01-0.61] in China).**Interpretation**: These results suggest high annual rates of IGRA reversion, even with the use of uncertainty zones; reversion rates decreased over time from exposure and at older ages.

86. Chepe, R.C., Mwanga, H.H., Kimera, Z.I., *et al*... (2025). Prevalence of Low Back Pain and Associated Factors among Bank Staff in Dar es Salaam, Tanzania (2024). *Journal of Occupational Health and Epidemiology*, Vol.14(3).

Abstract

Background: Low back pain (LBP) is a leading cause of disability worldwide. Bank staff are at increased risk due to exposure to ergonomic hazards. In Tanzania, data on the burden of LBP among this group are limited. This study aimed to determine the prevalence of LBP and its associated factors among bank staff. **Materials and Methods:** A cross-sectional study was undertaken in 2024 among employees of a private bank in Dar es Salaam, Tanzania. Participants were selected through stratified random sampling. Data were collected via an interviewer-administered questionnaire. Associations between LBP and predictor variables were assessed using multivariable modified Poisson regression models. **Results:** A total of 420 participants were included. The median age was 39 years, with 56.9% being female. The 12-month prevalence of LBP was 78.3%.Factors significantly linked to LBP included older age (aPR=1.18;95%CI:1.06-1.32)and being overweight/obese (aPR=1.07;95%CI:1.01-1.14).Other predictors included longer working hours, limited breaks, uncomfortable workstations, lack of physical activity, and prolonged sitting (aPR range:1.13-1.40).Protective factors included alternating between sitting and standing, access to ergonomic equipment, and walking to or from work (aPR range: 0.54-0.91).Negative perceptions of work environment were also significantly correlated with LBP (aPR range: 1.09-1.24).**Conclusions:** LBP is highly prevalent among bank staff and is affected by several factors, including sociodemographic, psychosocial, ergonomic, and lifestyle factors. Workplace interventions targeting these factors, such as providing ergonomic workstations, promoting physical activity, and addressing workplace stress, could help lower LBP as well as enhance employee health and productivity.

87. Chibwae, A., Jackson, A., Paul, C., *et. al*… (2025). Acquired Tracheoesophageal Fistula Following Delayed Removal of Ingested Button Battery in a Child: Successful Repair Using Omohyoid Muscle Flap, a Case from Low Resource Setting. *Clinical Case Reports*, Vol. 13(11). Doi:10.1002/ccr3.71459

Abstract

Acquired tracheoesophageal fistula (TEF) following delayed removal of an ingested button battery in children often presents with nonspecific symptoms and carries high morbidity. Early diagnosis using imaging and endoscopy is essential. Proximal TEF can be successfully managed through a lateral cervical approach with primary repair and interposition of an omohyoid muscle flap, which helps prevent recurrence and promotes favorable outcomes.

88. Chilipweli, P.M., Basinda, N., Sabuni, P.A., *et al*… (2025). Mapping neuro-disabilities and their dimensions among children under 5 years of age in the southern agricultural corridor of Tanzania: a preliminary baseline survey. *Neuropsycholog,* Vol.15. Doi:10.3389/fpsyg.2024.1426870

Abstract

Background: Neuro-disabilities involve impairments of the nervous system, affecting brain development and functioning. Due to limited scientific data on neuro-disabilities in Tanzania, this study examines maternal characteristics in high-risk areas, such as the Southern Agricultural Growth Corridor (SAGCOT). **Methods:** This cross-sectional study sampled 286 children aged 0–5 years and their mothers in the SAGCOT region. Each mother selected the youngest child within the specified age range. Multi-stage sampling was used to choose clusters and areas for the study. The Malawi Developmental Assessment Tool (M-DAT) was used to assess the children's developmental levels. Descriptive analysis determined distribution patterns, while multivariate analyses were performed to identify significant factors. Modified Poisson regression with robust standard errors estimated prevalence ratios (PRs) and their 95% confidence intervals (CIs). **Results:** The study included 286 mother–child pairs from four clusters: Ihemi, Kilombero, Ludewa, and Mbarali. The children's median age was 24 months, with the majority aged between 13 and 48 months. Boys constituted a slight majority (59.4%). The majority of mothers were married (72.4%), had primary education (56.6%), and were engaged in non-farming occupations (56.3%). Neurodevelopmental assessments revealed that 11.2% of children were fully developed, while 88.8% exhibited development delays. Adjusted prevalence ratios (aPR) with 95% confidence intervals identified significant associations between developmental domains and demographic variables such as age, gender, marital status, and maternal occupation. **Conclusion:** The study highlights a high prevalence of neuro-disability among children in Tanzania's southern corridor, revealing disparities across regions and the impact of factors such as gender and marital status. Targeted interventions are essential to address these developmental challenges effectively and promote optimal child development and wellbeing.

89. Chilipweli, P.M., Nyanza, E.C., Ngowi, A.V. (2025). Patterns, Practices, and Socio-Environmental Dynamics of Pesticide Use in the Horticultural Value Chain: Insights from Smallholder Farmers and Agro-Input Sellers in Iringa and Njombe, Southern Highlands, Tanzania. *Agrochemicals*, Vol. 4(*4*). Doi:10.3390/agrochemicals4040021

Abstract

Background: The use of pesticides among smallholder farmers, agrochemical sellers, and agricultural officers involves a complex interplay of knowledge, economic factors, and regulatory frameworks. Therefore, this study explores the patterns, practices, and socio-environmental dynamics of pesticide use among smallholder farmers and agro-input sellers in Iringa and Njombe. **Method:** This study employed a qualitative, phenomenological design, guided by the socio-ecological model (SEM), to explore the lived experience of farmers, agro-dealers, and extension officers. It involved a total of 23 interviews performed in the Njombe and Iringa regions. Data were collected between October 2024 and March 2025, using a combination of in-depth

phenomenological interviews, key informant interviews, and field observations, and were categorized into themes and subthemes analyzed using InVivo. **Results:** The study involved a total of 23 participants drawn from the Iringa and Njombe regions. The gender distribution was nearly balanced, with 52.1% male and 47.8% female respondents. The mean age of participants was 33 years (95% CI: 29.3–37.3). In terms of education, over half (52.17%) had completed primary school. The findings show that smallholders in Iringa and Njombe widely use mixed pesticides and fertilizers, rely on trusted brands, and adapt to climate impacts, but face challenges with regard to unsafe mixing, poor storage, fake products, and weak regulation, highlighting the need for better education, market oversight, and safer practices. **Conclusion:** Using the socio-ecological model, the findings indicate that pesticide use among smallholder horticultural farmers in Iringa and Njombe is influenced by a complex interaction of socio-economic constraints, market forces, climate variability, and institutional shortcomings. Although farmers have some awareness of safe practices, systemic barriers continue to limit the adoption of sustainable pesticide management.

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90. Chiloleti, G. P., Arda M. F., Muhsin, A., *et al*... (2025). Proportion, quality of life and factors associated with perinatal urinary incontinence among pregnant women attending at Muhimbili National Hospital. *African Journal of Urology*, Vol. 31(1). Doi:10.1186/s12301-024-00471-w

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Abstract

Background: Perinatal urine incontinence (PUI) affects approximately 200 million women worldwide. It is hypothesized that it has a multifactorial etiology that includes hormonal changes, pregnancy, urethral angle changes, and childbirth-related forces. The prevalence of PUI ranges from 32 to 64%. These conditions affect quality of life, leading to significant physical and emotional distress, self-esteem, social interactions, postpartum depression and anxiety. Determining the factors associated with PUI and providing appropriate support and treatment options for women experiencing perinatal urinary incontinence can improve the well-being of those affected. The significance of this study is to help establish the foundation of Perinatal urinary incontinence awareness in our facility, and possibly knowing the burden and associated risk factors, care to be taken in the reassurance of the patient and, for a future urological approach and overall management. **Objectives:** To assess the proportion, quality of life and factors associated with perinatal urinary incontinence among pregnant women admitted to the Muhimbili national hospital. **Methodology:** This prospective cross-sectional study involved 354 pregnant women in perinatal period. The statistical analysis of the data was done in the SPSS version 20, whereby descriptive statistics and categorical data were described by frequency tables, graphs, and percentages, and numerical variables by mean, median, and standard deviation. Bivariate logistic regression was used to obtain variables that were associated with PUI. Multivariate logistic regression for controlling for confounders. *P* value of < 0.5 was considered to be statistically significant. Quality of life (QoL) was assessed by ICIQ-UI SF tool. **Results:** A total of 354 women were approached, all of whom participated in the study. The mean age of the participants was 30 years (range 30–34 years). The overall proportion of PUI among the participants was 59 [16.7%]. Of the total participants with PUI, 28 (49.1%) had Stress urine incontinence (SUI), 9 (15.8%) had Urge urine incontinence (UUI), Mixed urine incontinence (MUI), and 1 (1.8%).

Overall, among the participants who had PUI, quality of life (QoL) was moderately affected in 31 (52.5%) participants, followed by 17 (28.8%) whose QoL was slightly affected, 10 (16.9%) whose QoL was poor, and only 1 (1.7%) whose quality of life was very poor. In the multivariable logistic regression model, Factors associated with PUI were statically significant, with $P < 0.05$. A significant association between UI and a normal BMI, pre-obesity [AOR 1.351 95% CI 1.161–1.765], grand multipara [AOR 1.092 95% CI 1.027–1.323], and a previous history of cesarean section [AOR. 5.126 95% CI 2.081–12.628]. **Conclusions:** Perinatal urinary incontinence has a considerable impact on health complications across various aspects, despite not being a life-threatening condition. The effects of urinary incontinence extend to daily activities, sexual health, personal relationships, social engagement, and mental well-being.

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91. Chipaga, D., Majigo, M., Malima, B., *et al*... (2025). Prevalence of multi-drug-resistant bacteria causing surgical site infection at tertiary hospitals in Dar es Salaam, Tanzania: a call for strengthening infection prevention and preoperative prophylaxis. *Alexandria Journal of Medicine,* Vol. *61*(1). Doi:10.1080/20905068.2025.2466271.

Abstract

Background: Surgical site infections (SSI) are common healthcare-associated infections, yet data on causative bacteria and antimicrobial susceptibility patterns are limited. The study aimed to determine the bacterial pathogens and antimicrobial resistance patterns among post-operative patients at tertiary hospitals in Dar es Salaam, Tanzania. **Methods:** We conducted a cross-sectional study between September 2022 and February 2023 to investigate SSI through an aerobic culture of pus aspirates or wound swabs. Isolates were identified using conventional methods and an analytical profile index 20E test for Enterobacterales. Antimicrobial susceptibility testing was performed using Kirby Bauer disc diffusion methods. Continuous variables were summarized as mean and standard deviation, while categorical variables were summarized as proportions. **Results:** A hundred-fifty-eight patients were enrolled, with a mean age of 42.20 ± 12.13 years. Of 158,140(88.6%) showed bacterial growth and 164 isolates. Escherichia coli 45 (27.4%), Pseudomonas aeruginosa 38 (23.2%), and Staphylococcus aureus 38 (23.2%) were the most isolated. Among the Enterobacterales, 39/80 (48.8%) were extended-spectrum beta-lactamase producers. Methicillin-resistant Staphylococcus aureus was detected in 11/38 (29.0%) Staphylococcus aureus. Overall, multi-drug-resistant strains were 127/164 (77.4%). **Conclusions:** Gram-negative bacteria were the predominant cause of SSI. More than three-quarters of isolates were multi-drug-resistant strains. The findings underscore the need to regularly review antimicrobial prophylaxis practices and treatment guidelines, strengthen infection prevention and control measures, and antimicrobial stewardship.

92. Chiume, M., Lawn, J. E., Salim, N., *et al*… (2025). Neonatology's future: securing the most impact where most newborn infants die. *The Lancet Child & Adolescent Health*, Vol. 9(8). Doi:10.1016/S2352-4642(25)00106-3

Abstract

Background: We welcome the Lancet Child & Adolescent Health Commission on the future of neonatology, calling for much-needed attention to survival and health of the world's next generation.1 With a focus on the slow innovation pipeline for medicines and medical devices, missed opportunities to involve vulnerable babies in clinical trials, and inadequate appreciation of crucial life-course outcomes, the Commission presents a case for advancing neonatal care globally by accelerating research and development of neonatal medicines, medical devices, and human resources and calls for heightened stakeholder group commitment across ethical frameworks, industry, clinical care specialties, and families to invest in neonatal care to accelerate progress in newborn health worldwide.

93. Chombo, S., Bachwenkizi, J., Omary, H., *et al*... (2025). Associations of temperature and precipitation with malaria in children under 5: A multi-country study in Sub-Saharan Africa. *Plos one*, Vol. *20*(10). Doi; 10.1371/journal.pone.0335031

Abstract

Climate change is a significant global challenge with major impacts on human health. It directly affects vector-borne diseases such as malaria by expanding vector ranges, boosting reproduction and biting rates, and shortening pathogen incubation periods. This study aimed to evaluate the association of temperature and precipitation with malaria transmission among children under five in Sub-Saharan Africa (SSA). We employed an analytical cross-sectional design to examine the relationship between temperature, precipitation, and malaria transmission among 15,009 children aged under five in six SSA countries: Burundi, Burkina Faso, Malawi, Nigeria, Tanzania, and Uganda. Historical climate data (temperature and precipitation) were retrieved from ERA-5 for the 12 months preceding the surveys. Weighted Modified Poisson regression model was used to assess the associations between climatic variables and malaria transmission. Malaria prevalence in the sample averaged 25.9%, with Nigeria (38.1%) and Burundi (38.0%) showing the highest rates. The results indicate that a one-degree Celsius rise in temperature increased malaria risk by 1.77-fold (95% CI: 1.297–2.414, $p < 0.001$), while a one-unit rise in squared temperature reduced risk by 1% (95% CI: 0.984–0.997, $p = 0.002$). Children living in regions with annual precipitation between 250–500 mm faced a 72% higher risk of malaria than those in areas receiving over 500 mm (95% CI: 1.331–2.212, $p < 0.001$), highlighting the nonlinear influence of climate on malaria transmission among vulnerable populations. In conclusion, the findings suggest a significant link between precipitation, temperature and increased malaria transmission in SSA. This underscores the importance of incorporating climate data into malaria control strategies to mitigate transmission risks among vulnerable populations.

94. Christina, V. M., Veronica, M., Margaret, I., *et al*… (2025). Knowledge of Cervical Cancer and Prevention Methods among Women attending Reproductive Child Health Clinics in Tanzania: A Mixed-Method Stud. *Tanzania Medical Journal*, Vol. 36(4). Doi:10.4314/tv3vbx39

Abstract

Background: Cervical cancer, despite being preventable, is the leading cause of death among women globally, with 10,241 new cases in Tanzania annually causing over 6,000 deaths. Despite the Human papillomavirus (HPV) vaccine as one of the effective strategies for cervical cancer, its uptake remains low. The latter happens amidst a low turnout of women for cervical cancer screening. Altogether, this poses a question of awareness and knowledge of women on cervical cancer prevention methods. **Objective:** To analyze the awareness of cervical cancer and knowledge of preventive strategies among women of childbearing age in Tanzania. **Methodology:** A hospital-based mixed-method study was conducted in May 2022 in Ilala municipal council, Dar es Salaam, Tanzania. A total of 404 women of childbearing age participated in a cross-sectional survey, while 46 women participated in six focus group discussions. Stata software 12 was used to analyze quantitative data, while qualitative data were analyzed thematically. **Results:** Out of the 404 women interviewed, 259 (64.1%) were married, and 196(48.5) had primary education, while the majority 253(62.1%) were aged between 25 – 39 years. The majority, 314 (77.7%), had knowledge of cervical cancer, while 165 (40.8%) knew that cervical cancer is preventable, with only 48 (11.9%) ever been screened, and 21(5.2%) were vaccinated against HPV. Following thematic analysis, participants described how lack of knowledge can lead to fear of screening procedures, fear for diagnosis and worries on the anticipated cervical cancer treatment costs. Limited knowledge of the HPV vaccine is the primary reason for not being vaccinated and preventing their girls from being vaccinated. **Conclusion:** Most women had the knowledge of the disease but unaware of the main risk factors, HPV infection, and vaccine availability, suggesting the need for frequent health education sessions and support for social and mass media to educate the community.

Keywords: *Cervical cancer, Screening, HPV vaccination, Preventive methods*

95. Chung, C.C., Wu, I.C., Bamodu, O.A., *et al*... (2025). Machine learning in myasthenia gravis: A systematic review of prognostic models and AI-assisted clinical assessments. *Diagnostics*, Vol. 15(16). Doi:10.3390/diagnostics15162044.

Abstract

Background: Myasthenia gravis (MG), a chronic autoimmune disorder with variable disease trajectories, presents considerable challenges for clinical stratification and acute care management. This systematic review evaluated machine learning models developed for prognostic assessment in patients with MG. **Methods:** Following PRISMA guidelines, we systematically searched PubMed, Embase, and Scopus for relevant articles published from January 2010 to May 2025. Studies using machine learning techniques to predict MG-related outcomes based on structured or semi-structured clinical variables were included. We extracted data on model targets, algorithmic strategies, input features, validation design, performance metrics, and interpretability methods.

The risk of bias was assessed using the Prediction Model Risk of Bias Assessment Tool. Results: Eleven studies were included, targeting ICU admission (*n* = 2), myasthenic crisis (*n* = 1), treatment response (*n* = 2), prolonged mechanical ventilation (*n* = 1), hospitalization duration (*n* = 1), symptom subtype clustering (*n* = 1), and artificial intelligence (AI)-assisted examination scoring (*n* = 3). Commonly used algorithms included extreme gradient boosting, random forests, decision trees, multivariate adaptive regression splines, and logistic regression. Reported AUC values ranged from 0.765 to 0.944. Only two studies employed external validation using independent cohorts; others relied on internal cross-validation or repeated holdout. Of the seven prognostic modeling studies, four were rated as having high risk of bias, primarily due to participant selection, predictor handling, and analytical design issues. The remaining four studies focused on unsupervised symptom clustering or AI-assisted examination scoring without predictive modeling components. **Conclusions:** Despite promising performance metrics, constraints in generalizability, validation rigor, and measurement consistency limited their clinical application. Future research should prioritize prospective multicenter studies, dynamic data sharing strategies, standardized outcome definitions, and real-time clinical workflow integration to advance machine learning-based prognostic tools for MG and support improved patient care in acute settings.
Keywords: *machine learning; myasthenia gravis; myasthenic crisis; prediction; prognosis; systematic review*

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96. Cong, L., Ping, L., Shuangyu, L., *et al*… (2025). Characteristics of Si3N4 Powder Co-modified by Silane Coupling Agent and Sodium Polyacrylate and the Properties of Light-Curing Slurry. *Ceramics International*, Vol. 51(27). Doi: 10.1016/j.ceramint.2025.09.156

Abstract

Additive manufacturing provides an effective approach for producing silicon nitride ceramic components with complex geometries. However, the high optical absorption, refractive index, and natural hydrophilicity of silicon nitride hinder the stability and printability of Si_3N_4 slurry in photopolymerization-based stereolithography. This research investigates the modification of silicon nitride powder using a silane coupling agent and sodium polyacrylate to address these issues. The effects of these modifiers on UV absorbance, curing depth, slurry viscosity, and stability of silicon nitride slurry were analyzed. Results show that UV absorbance of modified silicon nitride is reduced by 29 %, while curing depth increases by 23 %. With a solid content of 45 vol% the slurry viscosity is 6.622 ± 0.35Pa·s, and the flexural strength reached 356 ± 3.3 MPa. The combined modification of silane coupling agent and sodium polyacrylate resolves viscosity, stability, and curing behavior issues, enabling accurate 3D printing of complex silicon nitride ceramics.

97. Connelly, S.V., Muller, J.G., Ali, M., *et al*… (2025). Artemisinin partial resistance mutations in Zanzibar and Tanzania suggest regional spread and African origins, 2023. *The Journal of Infectious Diseases*, Vol. 233(2). Doi:10.1093/infdis/jiaf431

Abstract

Background: Artemisinin partial resistance, driven by Plasmodium falciparum K13 mutations, threatens malaria control. Zanzibar is vulnerable to artemisinin partial resistance spread but lacks recent molecular surveillance. We sequenced samples in Zanzibar and mainland Tanzania collected from 2022 to 2024. K13 mutations were found in 2 of 1440 participants (P441L, A675V) in Zanzibar and 6 of 3762 (R561H, P441L) in mainland Tanzania. Based on whole genome sequencing data, K13 mutations appear to be of African origin with regional spread. Frequent parasite importation appears to maintain partner drug mutation frequencies similar to the mainland, where artemether-lumefantrine selects for mutations favoring artesunate-amodiaquine sensitivity. Ongoing molecular surveillance remains essential to track these patterns.

98. Cornick, J., Elwood, S., Platts-Mills, J., *et al*... (2025). Azithromycin treatment response as a probe to attribute bacterial etiologies of diarrhea using molecular diagnostics: a reanalysis of the Antibiotics for Children with Severe Diarrhea (ABCD) trial. *Frontiers in microbiology*, Vol. *16*. Doi:10.3389/fmicb.2025.1606207

Abstract

Background: Multi-pathogen molecular diagnostics enhance our understanding of the pathogen-specific burden of diarrhea. However, attributing etiology remains challenging in high-burden settings where coinfections are common. The Antibiotics for Children with severe Diarrhea (ABCD) trial provides a unique opportunity to leverage azithromycin treatment response to identify bacterial diarrhea. **Methods:** We analyzed data from 6,692 children with watery diarrhea enrolled in ABCD (2017 to 2019) who were randomized to receive azithromycin or placebo. We modelled the heterogeneity in the azithromycin treatment response by the enteric pathogen quantity detected by quantitative PCR using log-binomial regression. **Results:** Azithromycin treatment response varied by pathogen quantity, with the strongest effect observed for *Shigella*. Each $\log_{10}$ increase in *Shigella* quantity was associated with a 13% reduction (95% CI: 3–23%) in diarrhea risk at day 3 in the azithromycin group compared to placebo. We observed similar, though non-significant, trends for *Vibrio cholerae*, ST-ETEC, and tEPEC. In contrast, no association was found between pathogen quantity and azithromycin response for *Campylobacter*, LT-ETEC, or EAEC. These patterns remained consistent when evaluating hospitalization or death risk within 90 days. **Conclusion:** The observed associations between azithromycin treatment response and pathogen quantity for *Shigella*, *Vibrio cholerae*, ST-ETEC, and tEPEC support prior evidence that these pathogens are likely causes of diarrhea when present in high quantities. Conversely, the absence of a similar response pattern for *Campylobacter*, LT-ETEC, and EAEC is consistent with large-scale studies showing a limited association between their quantities and diarrhea.

99. Cosmas, F.N., Urioa, F.H., Mbugi, E. V. (2025). Comparative Performance of Different Glucometers for Random Glucose Measurements in Diabetic Patients at Emergency Medicine Department of the Muhimbili National Hospital, Dar es Salaam, Tanzania. *East Africa Science*, Vol. *7*(1). Doi.org/10.24248/easci. v7i1.122

Abstract

Background: Proper management of diabetic patients is dependent on accurate patient self-monitoring of blood glucose levels at home and during healthcare visits. Several glucometers are currently available in the market with variability in technical and clinical accuracy. The study aimed at assessing the performance of various glucometers and their reliability as tools worth depending on for patient blood sugar management. **Methods:** This cross-sectional study involved 125 diabetic patients aged 39-59 years old, comprised of 56 (47%) males and 69 (55.2%) females, recruited from November 2022 to January 2023 at Muhimbili National Hospital Emergency Medicine Department. Patients' demographic and other relevant information were recorded using a questionnaire along with glucometer readings and the laboratory values of glucose. Bland Altman graphs, ISO 15197:2013, Consensus Grid Reference, were used to assess the technical and clinical accuracies. **Results:** A total of 78 (62.4%) of participants did not have glucometers at home. The results showed five glucometers, namely, Accu Chek, GlucoPlus, GlucoNavii, OneTouch Ultra Plus Flex and CareSens, to have relatively stable mean glucose levels between glucometers and known laboratory glucose readings. There was a likelihood for CareSens not meeting the ISO 15179:2013 criteria while both Accu Chek and CareSens glucometers had higher coefficient of variation (CV) values of 77% and 56.5%, respectively. **Conclusions:** This study highlights the variability in readings among glucometers with GlucoPlus, GlucoNavii and OneTouch Plus, showing a degree of reliability for patients' self-monitoring of random blood glucose levels. Thus, regular evaluation of glucometers remains key for their accuracy and patient management.

100. Costantine, A.R., Urasa, S.J., Sadiq, A.M., *et al*… (2025). Catheter-Related Bloodstream Infections Among Haemodialysis Patients in Northern Tanzania: Insights from a Single-Centre Retrospective Study. Vol.8(1). Doi:10.1002/hsr2.70338

Abstract

Background and Aims: A catheter-related bloodstream infection (CRBSI) is a life-threatening complication of hemodialysis. It is responsible for significant morbidity and mortality and a costly long hospital stay. Despite its burden, little is known about the factors associated with it and the antibiogram of its responsible causative bacteria. This study aimed to evaluate the determinants of hemodialysis CRBSI and the appropriate antibiogram for the isolated bacterial pathogens among patients attending the KCMC hemodialysis unit. **Methods:** A hospital-based retrospective analytical cross-sectional study involved adult patients with CKD or AKI undergoing hemodialysis at KCMC with tunneled or non-tunneled central venous catheters who attended from January 1, 2021 to December 31, 2022. Data were collected from the hospital's electronic medical record system. Statistical analysis was performed using SPSS version 27. Multivariate logistic regression was used to determine the factors associated with CRBSI. A p-value of < 0.05 was

considered statistically significant. **Results:** A total of 286 patients were analyzed. The patients were predominantly males (70.6%), and more than half were above 55 years old (56%), with a mean age of 58 (SD ± 14.8) years. 56.6% developed CRBSI and were predominantly gram-positive (69.7%). Major associated factors were hypoalbuminemia of < 35 g/dL, diabetes mellitus, anemia of haemoglobin < 10 g/dL, and having a femoral central venous catheter. For gram-positive bacteria, the most efficient antibiotic was vancomycin, with an overall average efficacy of 99% for all isolates. For gram-negative bacteria, the most efficient antibiotic was meropenem, with an overall average efficacy of 82.1% for all isolates. **Conclusion:** Over 50% of patients developed CRBSI, and gram-positive bacteria were the major causative bacteria. Associated factors were multifactorial, and preventive care would be ideal to reduce the number of CRBSI based on these findings.

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101. Costantine, J.K., Sangeda, R.Z., Runyoro, D.K.B., et al… (2025). Ethnopharmacological survey and literature verification of medicinal plants used to treat peptic ulcer disease by the indigenous people of the Missenyi and Kyerwa districts in Kagera, Tanzania. *Clinical Traditional Medicine and Pharmacology,* Vol. 6(3). Doi: 10.1016/j.ctmp.2025.200238

Abstract

Background: Peptic ulcer disease (PUD) is a common health problem that affects many people worldwide and contributes to morbidity and mortality. While several antiulcer medications show considerable effectiveness in treating ulcers, they often come with high costs and can lead to issues like resistance, tolerance, relapses, side effects, and adverse reactions. This highlights the necessity for optimal treatments that are economical, safe, and have a minimal risk of recurrence, especially those derived from natural sources. **Objective:** This study aimed to document the medicinal plants used to manage PUD by the indigenous people of the Missenyi and Kyerwa districts of Kagera, Tanzania. **Methods:** A cross-sectional survey was conducted in four villages in the Missenyi and Kyerwa districts through face-to-face interviews guided by a semi-structured questionnaire. The information obtained included the participants' awareness of PUD, its symptoms, and its management using medicinal plants. Then, the plant species were collected and authenticated, followed by a literature review and verification. **Results:** Thirty informants were interviewed, and 20 medicinal plants from 16 taxonomic families were identified. The informants' knowledge of PUD was poor, and commonly used plant parts included seeds and whole plants, mixed with adjuvants such as water, honey, raw eggs, milk, and black tea decoctions. Decoctions represent the most utilized mode of preparation, and most informants recommend a dose equivalent to 250 mL, after every eight hours, for three months. The majority (60%) of the documented plants are edible. Literature verification supports the claimed ethnomedical use of adjuvants and 85% of plants, whereas 15% (Arachis hypogaea, Lagenaria sphaerica, and Myrica salicifolia) are being reported for the first time in this study. **Conclusion:** The use of the majority of plants documented in this study has a literature backup, and the fact that most plant parts are edible minimizes the risk of toxicity. In addition, the use of three plants to treat PUD was reported for the first time in this study. Therefore, this study recommends that their activity, safety, and efficacy be studied and that more

extensive ethnopharmacological surveys be conducted to avoid the loss of valuable information, as many plants are yet to be explored.

102. Daniel, E., Machibya, F., Masumbuko, M.P., *et al*... (2025). Inter-disciplinary approach in the management of a case with anterior Bolton's discrepancy. "A Case Report". *Medical Journal of Zambia*, Vol. 52(5). Doi: 10.55320/mjz.52.5.762.

Abstract

The assessment of the intermaxillary teeth width relationship is often overlooked during diagnosis and treatment planning of orthodontic patients. This is particularly true for individuals with no obvious teeth size discrepancy. Inter maxillary teeth size assessment is important for early detection of tooth size disproportion between the upper and lower jaws. This allows formulation of the definitive treatment planning, which may involve both restorative and orthodontic specialists. The current work reports a case of 16 years old female patient who complained of multiple spaces on the upper front teeth following braces treatment. The patient had been on fixed orthodontic treatment for 2 years and 8 months without any significant improvement. Past treatment history revealed an initial diagnosis of Angle's class I malocclusion with bimaxillary protrusion and lip incompetence, which was treated by fixed orthodontic treatment with the extraction of the first premolars on both jaws. Examination of the patient revealed multiple spaces on the third sextant with reduced Bolton's anterior ratio. In this case, a satisfactory occlusion was achieved by both orthodontic tooth movements and crown build-up.

103. Del Rosario Alsina, M., Benova, L., Kandeya, B., *et al*… (2025). Caesarean section for stillborn babies, Benin, Malawi, Uganda, and the United Republic of Tanzania. *Bull World Health Organ*, Vol. 103(9). Doi: 10.2471/BLT.24.292424

Abstract

Objective: To understand why caesarean sections are performed for stillborn babies by investigating caesarean section rates and indications in sub-Saharan African countries, and to examine whether fetal vital status at admission is associated with caesarean section. **Methods:** The study involved registry data on 105 872 babies weighing 1000 g or more born to women aged 13 to 50 years at 16 hospitals in Benin, Malawi, Uganda, and the United Republic of Tanzania between 1 July 2021 and 30 June 2023. We assessed caesarean section rates and indications, and used multivariable logistic regression analyses to estimate associations between fetal heartbeat at admission and caesarean section, by birth outcome. **Findings:** The caesarean section rate was 28.0% (29 640/105 872) overall, 40.9% (858/2098) for intrapartum stillbirths, and 19.0% (322/1694) for antepartum stillbirths. Previous caesarean section was among the top three indications across birth outcomes. Information on fetal heartbeat at admission was unavailable for 24.7% (7312/29 640) of caesarean section births. Multivariable analysis showed that the odds of a caesarean section was significantly higher when fetal heartbeat was not reported compared with the detection of a heartbeat among both antepartum (adjusted odds ratio, aOR: 2.55; 95% confidence interval, CI: 1.53–4.26) and intrapartum (aOR: 2.08; 95% CI: 1.51–2.87) stillbirths.

Conclusion: Unknown fetal heartbeat at admission was associated with a higher odd of caesarean section, possibly due to attempts to provide optimum care given diagnostic uncertainty. Decision-making processes on the mode of birth need to be better understood and feasible fetal monitoring recommendations are required for low-resource settings.

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104. Deoglas, D.K., Laizer, P.J., Shaban, S.D. (2025). Posttraumatic Epidermoid Inclusion Cyst Following Untreated Orbital-Zygomaticomaxillary Fracture: *Case Report. Clinical Case Reports*, Vol. 13(5). Doi:10.1002/ccr3.7047

Abstract

Timely and comprehensive treatment of craniofacial injuries is essential, as complications may arise, including epidermoid inclusion cysts. We hereby present a case of an orbital epidermoid cyst that developed a year after a patient was involved in a motor vehicle accident and sustained facial injuries that remained untreated.

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105. Dhatariya, K., Abbas, Z.G. (2025). Estimated costs of treating two standardised diabetes-related foot ulcers of different severity – A comparison of 7 global regions. *Diabetes Research and Clinical Practice*, Vol. 221. Doi: 10.1016/j.diabres.2025.11203

Abstract

Aims: To determine the estimated costs to treat two hypothetical diabetes related foot ulcers of differing severity in different World Health Organization regions. **Methods**: Descriptions of two standardised diabetes related foot ulcers of differing severity were sent to foot teams. Each centre was sent a picture and description of the ulcers, and a series of potential interventions. Respondents were asked to estimate how much each intervention would cost in their centre, and how many times each would be required before the ulcer would heal. These estimated costs were converted to US dollars. **Results:** Responses were received from 51 centres. Estimated costs for treating each wound were highest in the North America and Caribbean region. The average estimated cost of treating the milder wound was $2,942 (range $79–$17,758). Relative costs compared to those of North America and the Caribbean ranged from 0.36 to 0.75. The average time needed to cover the estimated costs of treating the wound was 8.6 (0.3–62.3) months' salary. The average estimated cost of treating the more severe wound was $17,403 ($546-$67,178). Relative costs ranged from 0.06 to 0.69. The average time needed to cover the estimated costs of treating the wound was 22.7 (0.2–98.3) months' salary. **Conclusions:** The estimated costs of treating ulcers vary widely across the world. ***Keywords:*** *Costs and cost analysis, Diabetes mellitus, Foot, Diabetic Therapy, Soft tissue Foot ulcer, Diabetic.*

106. Di Ciano, P., Le Foll, B., Zhao, S., *et al.*.. (2025). The effects of naturalistic cannabis use on cognition and subjective experience in older adults with normal cognitive function. *Journal of Psychopharmacology*. Doi:10.1177/02698811251370975

ABSTRACT

Background: Adults over the age of 65 years are the fastest growing group of cannabis users, but there are few studies of the acute effects of cannabis in this population. Aims: In the present naturalistic study, participants were invited to smoke their preferred legal cannabis in the lab prior to tests of verbal learning and memory, executive function and information processing, and functional vision and visual attention. **Methods:** In this counterbalanced, crossover design, performance after cannabis was compared to a sober condition. Blood levels of delta-9-tetrahydrocannabinol (THC) were measured and correlated with cognition. **Results:** Participants aged 65–78 (31 in total; 21 male) with normal cognitive function chose to smoke cannabis with an average THC content of 18.7%. Analysis with linear mixed models found that performance on the trail making test versions A and B was decreased 60 minutes after smoking cannabis, compared to the no cannabis condition. The percentage of words retained in the verbal free recall test was significantly higher in the cannabis condition; this was apparently due to a reversal in performance decrement. Smoked cannabis produced robust subjective drug effects. At 60 and 210 minutes, there were unclear correlations of blood THC and metabolites to cognitive performance. **Conclusions:** These results suggest that older adults who use cannabis may show decrements in performance on only some tests of cognition, and marked changes in subjective experience.

107. Dibaba, A.D., Ljani, N., Mustafa, A., *et al.*.. (2025). Complete Cystic Degeneration of a Uterine Myoma Posing a Diagnostic Dilemma. *Case Reports in Radiology*, (1). Doi:10.1155/crra/5627017

Abstract

In this case, we describe a rare presentation of a uterine myoma in a 42-year-old female patient who presented with a progressively enlarging abdominopelvic mass and heavy menstrual bleeding for 1 month. Initial work showed that the patient has a low hemoglobin count and elevated CA-125 tumor marker. A pelvic ultrasound revealed a cystic pelvic lesion with an undetermined origin. Subsequent follow-up after 6 weeks showed significant enlargement of the mass, prompting a pelvic MRI to be performed; the MRI showed a large, completely cystic uterine myoma arising from the anterior myometrium. This case highlights the atypical presentation of a common gynecological condition that can result in a diagnostic dilemma and the importance of advanced imaging such as MRI to be a problem-solving tool.

108. Dotto, D. K., Lyakurwa, D., Paulo, H. A., *et al*... (2025). Trends and determinants of female genital mutilation prevalence among women of reproductive age in Tanzania and Kenya: a demographic and health survey analysis (2008–2022). *BMC Public Health*, Vol. 25(1). Doi:10.1186/s12889-025-23519-0

Abstract

Background: Female genital mutilation (FGM) remains a critical global public health challenge, with over 230 million affected women and girls, predominantly in Sub-Saharan Africa. Despite the reduction in FGM in both countries, the proportion of women who had FGM are still considerably high. Therefore, the study seeks to examine the socio economic/demographic determinants of FGM in Kenya and Tanzania to inform more targeted interventions**. Methods**: A retrospective analysis of Demographic and Health Survey (DHS) data from 6,517 women aged 15–49 in Kenya and Tanzania (2008–2022) was conducted. Trends were assessed using weighted prevalence percentages and visualized via line graphs. Chi-square tests and multivariable logistic regression, adjusting for complex survey design, identified associations between FGM and socio-demographic, economic, and media-related determinants**. Results**: Higher education (AOR = 0.25, $p < 0.001$), wealth (AOR = 0.62, $p < 0.002$), urban residence (AOR = 0.37, $p < 0.001$), and weekly radio exposure (AOR = 0.53, $p < 0.001$) significantly reduced FGM risks. Conversely, rural residence (AOR = 4.12, $p < 0.001$), religious mandates (AOR = 3.81, $p < 0.001$), and recent internet use (AOR = 2.40, $p < 0.001$) increased vulnerability. Contextual disparities emerged: Kenya's FGM was strongly associated with Muslim affiliation (AOR = 9.41, $p < 0.001$), while Tanzania's persistence stemmed from rural agrarian livelihoods and occupational inequities. Internet use paradoxically correlated with higher FGM prevalence, reflecting potential urban rural divides in digital health messaging efficacy. **Conclusion**: Education, economic stability, urban living, literacy, and radio exposure lower FGM risks in Kenya and Tanzania, while rural poverty, limited education, religious justifications, and internet use increase them. FGM in Kenya is linked to Muslim practices, requiring faith-sensitive strategies, while in Tanzania, it is tied to rural ethnic groups.

109. Dunser, M.W., Leach, R., Hadded, M., *et al*… (2025). Emergency critical care - life-saving critical care before ICU admission: A consensus statement of a Group of European Experts. *Journal of Critical Care,* Vol. 87. Doi: 10.1016/j.jcrc.2025.155035

ABSTRACT

Critical illness has been defined as a state of ill health with vital organ dysfunction in which patients are at heightened risk of imminent death if suitable care is not provided, and has the potential for reversibility [1]. Critical illness is characterized by two key features: Firstly, critical illness is a time-sensitive condition where early medical interventions are likely to result in quicker recovery and improved chances of survival [2]. Secondly, critical illness is one stage in the continuum of a disease process, which begins before intensive care unit (ICU) admission and frequently even before hospital admission. In-hospital care of critically ill patients is historically centralized in ICUs. ICUs are dedicated organizational and architectural entities, where human and technical resources for the optimal management of the critically ill, are concentrated [3]. Despite

all efforts to accommodate the needs of the critically ill, a care gap often remains during the crucial phase between identification of critical illness and ICU admission. This ‘critical care gap’ increases the risk of adverse outcome and death in critically ill patients. This group of European physicians specialized in the management of critically ill patients both in and outside of ICUs will highlight the benefits and practicalities of initiating critical care before ICU admission. This consensus statement combines the group' s clinical expertise with a review of the literature. Following an initial draft, the manuscript was discussed and commented on by all group members. It was subsequently revised until consensus among all group.

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110. Dwarkanath, P., Sudfeld, C. R., Muthukrishnan, R, *et al.*.. (2025). Association of plasma biomarkers with risk of preeclampsia in India. *Current Developments in Nutrition*, Vol. *9*. Doi: 10.1016/j.cdnut.2025.106804

Abstract

Objectives: Hypertensive disorders of pregnancy (HDP), including preeclampsia (PE), affect 2-8% of pregnancies. Calcium supplementation reduces the risk of HDP through its hypothesized role in blood pressure regulation affecting peripheral vascular resistance and angiogenesis. We evaluated the association of plasma biomarkers at baseline (< 20 weeks of gestation) and 32 weeks with PE incidence in Indian pregnant women. **Methods:** We conducted a nested case-cohort study within a randomized, double-blind, non-inferiority trial that compared the efficacy of 500 mg/d with 1500 mg/d calcium supplementation for PE prevention in nulliparous women in India. The trial demonstrated that low-dose calcium was non-inferior to high-dose in reducing PE prevalence. This analysis included randomly selected cohort (n=1541) and all PE cases (n=105) from the eligible 2853 participants. Blood samples collected at baseline and 32 weeks of gestation were analyzed for angiogenic ((soluble fms-like tyrosine kinase receptors [sFlt1], placental growth factor [PlGF], soluble endoglin [sEng]), metabolic (leptin, renin), inflammatory (C-reactive protein [CRP], soluble tumor necrosis factor receptor 2 [sTNFR2], Interferon- gamma [IFN-γ], interleukin 6 [IL-6]), and endocrine biomarkers (parathyroid hormone [PTH]) using Luminex MAGPIX multiplex assays, immunoturbidimetric or electrochemiluminescence immunoassays. Hazard ratios (HR) and 95% confidence intervals for risk of PE were estimated using weighted Cox regression models to evaluate the association between biomarker quartiles (Q1 as the reference). **Results:** High levels of sFlt-1/PlGF ratio, IL-6 and leptin concentrations at baseline (Q4:HR=0.57, p=0.040; HR=2.89; p=0.017; HR=2.75, p=0.012) and at 32 weeks (Q4:HR=6.71, p< 0.001; HR=2.65, p=0.004; HR=4.14, p< 0.001) were associated with risk of PE. The Q4 values of PIGF at 32 weeks (Q4:HR=0.07; p< 0.001) showed a protective effect on PE risk. The high concentrations of sFlt-1, sEng, sTNFR2 and PTH (Q4:HR=4.63, p< 0.001; HR=13.21; p< 0.001; Q4:HR=2.52, p=0.006; HR=2.49, p=0.017) at 32 weeks showed an increased risk of PE. **Conclusions:** Plasma angiogenic and inflammatory biomarkers are associated with risk of PE, suggesting their potential use for early detection, prevention and management of PE.

111. Ebrahim, M.A., Makundi, S.E., Moshi, N.N. (2025). Multisystem Inflammatory Syndrome in Children associated with COVID-19 – *A Case Report and Literature Review*, Vol. 51. Doi: 10.21203/rs.3.rs-5964215/v1

Abstarct

Given the rarity of Multi-system Inflammatory Syndrome related to COVID-19 (MIS-C). This case report highlights the high index of suspicion to diagnose MIS-C in a child who presented with symptoms suggestive of acute gastroenteritis. While admitted to the hospital, her condition deteriorated, with worsening symptoms, clinical decline, deranging laboratory markers and significant radiological findings even with antibiotics. She had acute myocarditis with myocardial dysfunction on echocardiography and increased cardiac enzymes. Intravenous human immunoglobulin (IVIG) was given, but there was an additional need for inotropes (norepinephrine) and methylprednisolone, although the preliminary echocardiogram was normal. Early recognition of MIS-C with rapid escalation of care after IVIG administration is needed to prevent morbidity and mortality.

112. Ece, B., Kilonzo, M., Kaaya, S, *et al...* (2025). Building research capacity to adapt and develop Patient-Reported outcome measures in low-and middle-income countries: results from a psychometrics workshop in Tanzania. *BMC Health Services Research*, Vol. *25*(1). Doi.org/10.1186/s12913-025-13064-2

Abstract

Background: Effective antiretroviral treatment has transformed HIV into a manageable chronic condition. In Tanzania, about 1.7 million people are living with HIV (PLWH), with 79% achieving viral suppression. Patient-Reported Outcome Measures (PROMs) evaluate key outcomes that matter most for PLWH and are an essential tool to evaluate and improve health system performance. Research is needed to adapt and test PROMs to increase their use in HIV care in many low- and middle-income countries including Tanzania. Since 2019, Northwestern University and Muhimbili University of Health and Allied Sciences (MUHAS) have led an NIH-funded Fogarty D43 grant to build Patient-Centered Outcomes Research (PCOR) capacity in Tanzania. We report on the results of a workshop to strengthen capacity in PROMs development, adaptation and psychometric validation for improving health outcomes for PLWH in Tanzania. **Methods:** The three-day in-person workshop featured expert-led instruction and practical exercises on PROMs selection, development, adaptation, validity testing, factor analysis, and manuscript writing. We applied Kirkpatrick Framework (Level 1-reaction, Level 2-knowledge, and Level 3-use) for workshop evaluation. Participants completed pre-workshop surveys on goals, experience, confidence, and knowledge, followed by a post-workshop survey to assess satisfaction (Level 1), knowledge changes (Level 2), and plans for use (Level 3), along with feedback. **Results:** Twenty-seven participants (44.4% male) attended the workshop, with 92% stating it met workshop goals and 87.5% reporting personal goal fulfilment (Level 1). There was a significant increase in knowledge and confidence ratings across all topics (p <.001) (Level 2). Knowledge ratings rose from a mean of 0.44 (SD = 0.68) to 2.55 (SD = 0.56) while confidence increased from 0.47 (SD = 0.72) to 2.55 (SD = 0.56). Correct answer rates on knowledge assessments also improved and all

attendees reported plans to use the skills in future research. Qualitative feedback indicated high enthusiasm for the course and increased confidence in applying the learned skills to current or future research (Level 3). **Conclusions:** The workshop effectively strengthened capacity of attendees to adapt and validate PROMs for use in research and care in Tanzania. Plans are in place to incorporate this training into formal MUHAS courses. Similar workshops are needed to further enhance PROMs research capacity in the region for future application both in research and clinical care of PLWH.

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113. Edward, I.Y., Maritim, P., Jacobs, C., *et al*... (2025). Determinants of acceptability of schistosomiasis mass drug administration among primary school children in Busega District, Northwestern Tanzania. *Plos one*, Vol. 20(7). Doi: 10.1371/journal.pone.0327737.

Abstract

Background: Schistosomiasis is endemic in Tanzania, with a prevalence ranging between 12.7% to 87.6%. Mass drug administration (MDA) with praziquantel is the main recommended choice of preventive treatment for the disease. Low treatment coverage rates (46.6%) in Busega District, Northwestern Tanzania which are far less than the recommended effective coverage rates of ≥ 75% could indicate low acceptability and poor uptake of MDA. This study sought to establish factors associated with acceptability of schistosomiasis mass drug administration among primary school children in Busega District. **Methods**: A cross-sectional study was conducted among primary school children, randomly selected from six primary schools between 6th March and 29th May 2023. A validated generic questionnaire guided by the Theoretical Framework of Acceptability was used for data collection. The outcome of the study was acceptability of MDA, and the explanatory variables were socio-demographic factors and the seven constructs of the framework such as perceived moral about taking praziquantel, understanding of intervention purpose and affective attitude. Descriptive statistics and logistic regression with robust standard errors were conducted to identify factors associated with acceptability of MDA using STATA version 15. **Results:** The study sample comprised 615 primary school children, 60.16% girls and 39.84% boys. Age distribution ranged from 10 to 17 years with a median age of 13 years. About 55.28% were found to have high acceptability of MDA. Factors significantly associated with acceptability of MDA were; perceived effectiveness (AOR = 2.52; 95%CI = 1.31–4.85; p-value = 0.006), understanding of intervention purpose (AOR = 5.51; 95%CI = 3.16–9.59; p-value<0.0001), self-efficacy (AOR = 2.04; 95% CI = 1.08–3.85; p-value = 0.029), affective attitude (AOR = 5.10; 95% CI = 2.77–9.59; p-value<0.0001), and gender (AOR = 0.59; 95% CI = 0.38–0.94; p-value = 0.027). **Conclusion**: Slightly more than half of primary school children recorded high acceptability of MDA. However, perceived effectiveness, understanding of intervention purpose, self-efficacy, affective attitude, and gender strongly influence acceptability. This underscores the need for tailored, gender-sensitive community sensitization efforts regarding the benefits of MDA. Targeted educational campaigns and peer-led initiatives should be prioritized to increase awareness and acceptance, ultimately improving the effectiveness of the MDA program.

114. Edward, M., Shadrack, O., Engmann, S.T., *et al*… (2025). Global Mpox transmission and stigma: addressing barriers in affected communities. *Discover Public Health*, Vol. 22(1). Doi:10.1186/s12982-025-00470-4.

Abstract

The ongoing mpox outbreak, characterized by the ongoing global circulation of clade II mpox since 2022, has disproportionately impacted marginalized communities and underscores the importance of addressing both the epidemiological aspects and the societal impact of the disease on affected communities. This article examines mpox transmission dynamics globally, with a focus on populations whose proactive health-seeking behaviors have enabled early identification of cases. Yet, these communities also face stigma rooted in homophobia, racism, and misinformation, which hampers healthcare access and fuels discrimination. This stigma results in delayed care-seeking and barriers to effective public health interventions. The article advocates for continuous monitoring, adaptive public health strategies, and anti-stigma efforts to ensure that affected populations receive the support they need. While mpox primarily spreads through close contact, including sexual contact, the article highlights regional differences in framing and addresses misconceptions.

115. Edward, M., Singo, J.B., Kisoka, I.A., *et al*... (2025). Building resilient health programs through lessons from PEPFAR's funding challenges. *Discover Public Health*, Vol. 22(1). Doi:10.2471/BLT.08.052993

Abstract

Background: The global health landscape has been profoundly shaped by initiatives like the President's Emergency Plan for AIDS Relief (PEPFAR), which has made significant strides in combating HIV/AIDS worldwide. However, recent funding challenges faced by PEPFAR have highlighted vulnerabilities within the programs it supports, raising critical questions about the sustainability of health initiatives that heavily rely on external donors. This perspective explores the impact of PEPFAR's funding uncertainties, drawing lessons from its experience to inform the development of more resilient and locally sustainable health programs. Through examining how PEPFAR's challenges have affected key populations and program effectiveness, we uncover the pressing need for local ownership, strong leadership, and adaptive strategies to build robust health systems. The perspective presents strategic recommendations for transitioning toward sustainable health programs that can withstand financial instability, emphasizing the importance of long-term planning, cross-sectoral collaboration, and the collective responsibility of all stakeholders in global health.

116. Edwards, J.G., Dhingra, P., Liu, E., *et al*… (2025). Identifying risk factors for vomiting during diarrhea: A secondary analysis of a randomized trial of zinc supplementation. *Journal of pediatric gastroenterology and nutrition*, Vol. 80(4). Doi:10.1002/jpn3.12441

ABSTRACT

Objectives: Supplemental zinc during acute diarrhea reduces illness duration but also increases vomiting. In a recent trial, we found that children receiving lower daily doses of zinc (5 mg or 10 mg vs. 20 mg) had lower rates of vomiting with comparable stool output and duration of diarrhea. We performed a secondary analysis to identify sociodemographic and clinical factors associated with vomiting in children with acute diarrhea. **Methods:** We performed a secondary data analysis of 4500 children aged 6–59 months with an acute episode of diarrhea (<72 h before enrollment) in a randomized, double-blind controlled trial in India and Tanzania. To identify clinically important risk factors for overall, regimen-related, and regimen-unrelated vomiting, we created log-binomial models with relative risks (RRs) and 95% confidence intervals (CIs). **Results:** The trial enrolled 4500 children, of whom 1203 (26.7%) had any vomiting. After adjusting for multiple demographic and clinical characteristics, the presence of dehydration (RR: 1.45, 95% CI: 1.10–1.92), being underweight (RR: 1.22, 95% CI: 1.05–1.41), receipt of the rotavirus vaccine (RR: 1.89, 95% CI: 1.69–2.12), and household wealth above the median (RR: 1.17, 95% CI: 1.07–1.29) were factors associated with an increased risk of vomiting. Rotavirus vaccine receipt was nearly 100% concordant with the study site in Tanzania. Older age and lower zinc dosing were associated with a lower risk of vomiting. **Conclusions:** Young, underweight, or dehydrated children are more likely to have concurrent vomiting with zinc supplementation. Identification of these factors may allow providers to better monitor such children, thus reducing the chances of recurrent dehydration or inadequate dietary intake**.**

117. Egger, J.R., Kaaya, S., Lawala, P., *et al*... (2025). Mediators of functioning and quality of life among people living with schizophrenia participating in the culturally adapted family psychoeducation (KUPAA) trial in Tanzania. *Social psychiatry and psychiatric epidemiology*, Vol. 60(8). Doi: 10.1176/appi.books.9780890424841

Abstract

Background: KUPAA is a culturally adapted version of Family Psychoeducation (FPE) that is beneficial to people living with schizophrenia-spectrum disorders (PLWS), who may experience limitations across multiple functional domains. Family Psychoeducation can lead to improvement in functional outcomes that align with recovery goals; however, the mechanisms of action are unclear. The current study objective is to identify mechanisms by which the KUPAA intervention reduces disability and improves quality of life among care-seeking PLWS in Tanzania**. Methods:** This clinical trial was conducted at Muhimbili National Hospital and Mbeya Zonal Referral Hospital and included a total of 66 dyads composed of PLWS ages 18–50 years and their caregivers. A causal mediation framework employing the g-formula was used to estimate the indirect effects of the KUPAA intervention on disability and quality of life, through the mediated pathways of hopefulness, self-stigma, and generalized self-efficacy. **Result:** A greater decrease in mean disability score and an increase in quality-of-life score were observed among KUPAA

participants, compared to controls. We found that generalized self-efficacy mediates 33% of the effect of KUPAA on quality of life, and generalized self-efficacy and hope each mediate 36% of the effect of KUPAA on disability. **Conclusion Results:** provide preliminary support for the hypothesis that KUPAA can reduce disability and improve quality of life by reducing stigma, increasing hope, and strengthening self-efficacy. Future psychosocial programs for PLWS should consider tailoring their interventions to focus on reducing stigma, increasing hope, and fostering self-efficacy.

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118. El-Halabi, S., Annerstedt, K.S., Agossou, C., *et al*… (2025). Labour companionship and respectful treatment of women during childbirth: a cross-sectional study across 16 hospitals in Benin, Malawi, Tanzania, and Uganda. *BMC Medical Ethics*, Vol. 3(1). Doi:10.1136/bmjph-2024-002462

Abstract

Introduction: Evidence suggests that women value and benefit from having a labour companion during childbirth. However, the applicability of the evidence to low-income and lower-middle-income countries is limited and varies. Thus, we assessed the association between the presence of labour companions and mistreatment in 16 hospitals of Benin, Malawi, Tanzania and Uganda. **Methods:** We conducted a cross-sectional survey using a validated questionnaire administered to women at discharge after birth between December 2021 and March 2024. The main outcomes were factor-weighted respectful treatment score and its subscores on maintained respect and dignity, privacy and maintained confidentiality and no physical and verbal abuse. The independent variable was labour companionship. We assessed the association between labour companionship and mistreatment using a linear regression model with fixed effects and cluster robust standard errors. **Results:** Of the 4006 included women, 39% (n=1573) had a companion during labour and/or birth. Women across the four countries and regardless of companions' presence reported high degrees of maintained privacy and confidentiality (subscores ranging between 9.5/10 in Benin to 9.9/10 in Malawi). The presence of a labour companion was significantly associated with the absence of physical and verbal abuse experiences (β=0.07; p=0.004; 95% CI: 0.02; 0.12). **Conclusions:** Our study adds evidence on the positive relation between labour companionship and physical and verbal abuse. The coverage of labour companionship was low across the four countries. We call for the implementation of labour companionship to allow for greater benefits of this practice.

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119. El-Halabi, S., Pembe, A.B., Dumont, A., *et al*... (2025). Towards a universal implementation of labour companionship: a synthesis of the policy and facility environment of eight low-and middle-income countries. *Frontiers in health services*, Vol. 5. Doi:10.3389/frhs.2025.1550473

Abstract

Background: Labor companionship, the presence of a woman's person of choice during childbirth, has benefits to both woman and baby and is recommended by the World Health Organization since 2012. However, implementation remains sub-optimal, especially in low-and

middle-income countries (LMICs). This study aimed to understand the maturity of labor companionship implementation in eight low-and middle-income countries with a focus on the policy and facility environment. **Methods:** This was a multi-country study nested in two hospital-based implementation research studies: Action Leveraging Evidence to Reduce perinatal mortality and morbidity in Sub-Saharan Africa (ALERT) study and the Quality Decision-making by women and providers for appropriate use of caesarean section (QUALI-DEC) study. We included 48 hospitals from eight countries: Argentina, Burkina Faso, Thailand and Viet Nam (QUALI-DEC) and four from each of Benin, Malawi, Tanzania and Uganda (ALERT). We used data from (i) a document review, including national policy documents and (ii) health facility readiness assessment, including physical layouts of maternity wards, all collected between December 2019 and April 2021. Our analysis included two steps, (1) a structured data abstraction with coding to pre-defined categories to analyse the national polices and available resources on a facility level which informed the (2) categorization of implementation maturity in three implementation phases modelled by the framework by Bergh et al. and the logic model developed by Bohren et al. **Results:** Three of the eight countries lacked any national-level companionship policies, four had some mentioning and only one had detailed guidance on roles of labour companions and implementation guidelines. The physical outlines of maternity wards varied greatly, and lack of space was one of the main implementation barriers to all countries except Argentina. We classified Benin, Thailand and Viet Nam in the pre-implementation phase because of missing guidelines and limited implementation; Burkina Faso, Malawi, Uganda and Tanzania in the early implementation phase; and Argentina in the institutionalization phase where policies and facility resources were conducive. **Conclusion:** Successful implementation was supported by concrete and contextualized implementation guidance. To move to high implementation levels, supporting policies, guidelines and structural changes in the maternity wards are needed.

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120. Elias, E.M., Mwakigonja, A.R. (2025). Evaluation of Clinical and Histopathological Diagnosis of Kaposi's Sarcoma at Muhimbili National Hospital, Dar es Salaam, Tanzania. *The East African Health Research Journal*, Vol. 8(3). Doi: 10.24248/eahrj. v8i3.809

Abstract

Background: Treatment and outcome of Kaposi's sarcoma (KS) depend on a correct histopathological diagnosis; however, most KS cases in developing countries are diagnosed clinically without histopathological confirmation, which results in either over or underdiagnosis. Also, due to the number of histopathological mimickers in different stages of KS, which include benign to fatal conditions, the histopathological diagnosis of KS is not always correct. However, the HHV-8-LANA-1 Immunohistochemical (IHC) stain is positive in nearly all KS lesions and is considered to be an important diagnostic tool to differentiate KS from its histological mimickers. This study aimed to determine the quality of Kaposi's sarcoma diagnosis at MNH and whether it can be improved by the routine of HHV-8-LANA-1 immunohistochemical stain. **Methodology:** This was a retrospective cross-sectional hospital-based study of all KS cases diagnosed either by clinical, histopathological, or both in 2018. KS was diagnosed based on H&E morphology and confirmed by HHV-8-LANA-1 immunohistochemistry. The diagnosis utility of clinical and

histopathology was compared with HHV-8-LANA-1 immunohistochemistry. **Results:** There was almost perfect agreement between initial and reviewed histopathology for KS diagnosis (Kappa value= 0.892, p-value=.000). The clinical diagnosis concordance rate was 61% with no agreement (Kappa value −0.123, p-value=0.102). Clinical differential diagnosis included a wide range of pathological conditions ranging from less severe inflammatory to fatal malignant conditions. There was a substantial agreement between initial histopathology and HHV-8-LANA-1 IHC for KS diagnosis (Kappa=0.70, p-value .000) with a histopathology concordance rate of 88%. **Conclusion:** Histopathological examination of all clinical KS suspicions and HHV-8-LANA-1 immunohistochemistry confirmation is required since the study showed that the histopathology misdiagnosis of KS at MNH was unlikely to be the result of human error. We recommend that in every clinically suspected KS case, an adequate tissue biopsy should be taken for histopathology analysis and HHV8-LANA-1 immunostaining to avoid inappropriate treatment**.**

121. Endres-Dighe, S. M., Mlunde, L. B., Oga, E., *et al*... (2025). Psychometric Performance of a Tool to Measure Internalized Drug Use and Medications for Opioid Use Disorder Stigma Among People Who Use Drugs in Dar Es Salaam, Tanzania. *Drug and Alcohol Dependence*, Vol. 267. DOI: 10.1016/j.drugalcdep.2024.111834

Abstract

Background: The prevalence of cannabis use disorders (CUDs) in people who use cannabis recreationally has been estimated at 22%, yet there is a dearth of literature exploring CUDs among people who use medicinal cannabis. We aimed to systematically review the prevalence of CUDs in people who use medicinal cannabis. **Methods:** In our systematic review and meta-analysis, we followed PRISMA guidelines and searched three databases (PsycINFO, Embase, and PubMed) to identify studies examining the prevalence of CUDs in people who use medicinal cannabis. Meta-analyses were calculated on the prevalence of CUDs. Prevalence estimates were pooled across different prevalence periods using the DSM-IV and DSM-5. **Results:** We conducted a systematic review of 14 eligible publications, assessing the prevalence of CUDs, providing data for 3681 participants from five different countries. The systematic review demonstrated that demographic factors, mental health disorders and the management of chronic pain with medicinal cannabis were associated with an elevated risk of CUDs. Metaanalyses were conducted on the prevalence of CUDs. For individuals using medicinal cannabis in the past 6–12 months, the prevalence of CUDs was 29% (95% CI: 21-38%) as per DSM-5 criteria. Similar prevalence was observed using DSM-IV (24%, CI: 14–38%) for the same period. When including all prevalence periods and using the DSM-5, the prevalence of CUDs in people who use medicinal cannabis was estimated at 25% (CI: 18-33%). **Conclusions:** The prevalence of CUDs in people who use medicinal cannabis is substantial and comparable to that of people who use cannabis for recreational reasons, emphasizing the need for ongoing research to monitor the prevalence of CUDs in people who use medicinal cannabis.

122. Erasto, E., Manguzu, M.A., Nyondo, G.G., *et al*… (2025). Safety and effectiveness of different modes of labor induction among pregnant women delivering at referral

hospitals in Dar es Salaam, Tanzania: a cohort study. ***BMC Pregnancy and Childbirth*****, vol.** ***25*****(1). Doi:10.1186/s12884-025-07260-5**

Abstract

Background: Induction of labor is a medical procedure used to stimulate uterine contractions and promote cervical ripening, facilitating spontaneous vaginal delivery (SVD). Various induction methods are used globally, but data on their safety and effectiveness, especially in developing countries, are limited. This study evaluated the safety and effectiveness of different labor induction methods among pregnant women delivering at referral hospitals in Dar es Salaam, Tanzania. **Methods:** This cohort study enrolled pregnant women who underwent labor induction at referral hospitals in Dar es Salaam from April to May 2021. The induction methods assessed were oxytocin, dinoprostone, misoprostol, and balloon catheter. Data were collected on the proportion of women achieving SVD, median time to delivery, and maternal and neonatal outcomes. Data were analyzed using SPSS version 23, presenting findings as frequencies, percentages, and medians. Cox regression modelling assessed factors associated with SVD and delivery outcomes. **Results**: Of the 322 women included, 198 (61.5%) were at term, and 210 (65.2%) had comorbidities. Overall, 80% of women achieved SVD following induction. Among women induced with oxytocin, 95% achieved SVD, compared to 69% for dinoprostone, 72% for misoprostol, and 77% for balloon catheter. The median time to SVD was 5.42 h (IQR: 4.50–6.00) for oxytocin, 13 h (IQR: 12.00–14.00) for dinoprostone, 8.5 h (IQR: 7.00–9.00) for misoprostol, and 9.0 h (IQR: 8.00–10.00) for the balloon catheter. Maternal blood loss was significantly lower for oxytocin-induced women ($p < 0.001$), compared to misoprostol, dinoprostone, and balloon catheter. Neonatal outcomes were better for oxytocin-induced women ($p < 0.01$) and poorer for those induced with misoprostol ($p < 0.01$). Factors associated with achieving SVD included multigravidity (AoR = 1.57, $p = 0.004$), comorbidities (AoR = 1.47, $p = 0.007$), and use of oxytocin (AoR = 3.13, $p < 0.001$) or dinoprostone (AoR = 0.58, $p = 0.003$). **Conclusion**: Oxytocin was the most effective and safest method for labor induction within 24 h, resulting in favorable maternal and neonatal outcomes. Healthcare workers should prioritize oxytocin for timely deliveries, while considering alternatives like dinoprostone, misoprostol, and balloon catm

123. Erick, S.K., Jenifer, T.M., Joseph, C.H., ***et al*****… (2025). Evaluating the Use and Functional Design of Electronic Pharmacy Information Systems in Tanzania: A Case Study from 44 Hospitals Based in Dar es Salaam.** ***Tanzania Medical Journal*****, Vol. 36(3). Doi: 10.4314/56hdjj57.**

Abstract

Background: The effective use of well-designed electronic Pharmacy Information Systems (ePIS) is critical in supporting clinical decision-making and detecting medication errors in hospital settings. These systems play a vital role in preventing medication errors, a significant factor contributing to patient safety. Globally, 6% of hospitalizations result from such errors. In this study, we aimed to assess the design, usage level and predictors of ePIS adoption in hospitals in Dar es Salaam, Tanzania. **Methodology:** A cross-sectional survey was conducted from November 2019 to January 2020 across 44 (86%) eligible hospitals in Dar es Salaam to assess the proportion

meeting recommended ePIS standards. Functionalities were categorized into four classes: patient data, prescription, clinical decision support (including alerts for drug interactions, allergies, dosages, indications, and side effects), and dispensing and administration. Additionally, the usage level of these functionalities among healthcare providers was evaluated using a self-reported questionnaire. Adjusted odds ratios (AOR) with 95% confidence intervals (CI) identified independent predictors of ePIS usage levels. **Results:** About one-third of the assessed hospitals had ePIS with recommended functionalities. The most common were patient data (74%), followed by medication dispensing and administration (42.2%), and prescription (24.1%), with none supporting clinical decision-making. Utilization was high for patient data (64.9%), medication administration (47.2%), and prescription and dispensing (21.9%). No respondents used clinical decision support systems. High ePIS usage was associated with receiving supportive supervision (AOR=1.91 [1.18-3.15]), using ePIS for over a year (AOR=2.35 [1.39-4.00]), working in a private hospital (AOR=1.77 [1.06-2.97]), being male (AOR=1.65 [1.02-2.66]), being a nurse (AOR=2.04 [1.16-3.59]), and working in a hospital with an ICT staff size of nine or more (AOR=2.22 [1.33-3.69]). **Conclusion:** Most adopted ePIS functionalities were not aimed at clinical decision-making, and their utilization is notably low. Adherence to established guidelines and regular monitoring of system and user performance are needed. ***Keywords:*** *Electronic Pharmacy Information System, Information and Communications Technology, Electronic Medical Records, Computerized Provider Order Entry, Medication Use Processes, Medication Errors*

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124. Ernest, E., Fakih, Z., Urio, O., Kisenge, R. (2025). Depression, anxiety and associated factors among caregivers of children and adolescents with epilepsy attending Muhimbili paediatric neurology clinic: a cross-sectional study. *BMJ open,* Vol. 15(9). Doi:10.1136/bmjopen-2024-098286

Abstract

Objectives: This study aimed to assess the prevalence of depression and anxiety and to identify factors associated with these conditions among caregivers of children and adolescents with epilepsy attending the paediatric neurology clinic at Muhimbili National Hospital (MNH) in Tanzania. **Design:** A hospital-based cross-sectional study**. Setting:** The paediatric neurology clinic of a national referral hospital in Dar es Salaam, Tanzania. Participants 427 caregivers of children with epilepsy (CWE) were consecutively enrolled. Eligibility criteria included being 18 years or older and having provided care for the child for at least 6 months. Caregivers unable to read and write in Swahili or previously diagnosed with a mental illness before assuming the caregiving role were excluded. Primary and secondary outcome measures Primary outcomes were the prevalence of depression (assessed with the Patient Health Questionnaire-9 (PHQ-9), cut-off ≥10), anxiety (assessed with the Generalized Anxiety Disorder-7 tool (GAD-7), cut-off ≥10), and their co-occurrence. Secondary outcomes were the factors associated with these conditions, analysed using logistic regression and reported as adjusted odds ratios (aORs). **Results:** Depression was observed in 74 (17.3%, 95% CI: 13.8 to 21.3) participants and anxiety was found in 74 caregivers (17.3%,95% CI: 14.1 to 20.8). 38 (9.0%, 95% CI: 6.3 to 11.7) participants had concurrent depression and anxiety. Factors associated with depression were having a child: less than 5 years old (adjusted OR (aOR)=6.56, p=0.012), epilepsy duration of more than 5 years

(aOR=2.80, p=0.048), history of epilepsy-related injuries (aOR=2.64, p=0.015) and three or more admissions (aOR=2.56, p=0.046). Caregivers whose children had not started school or were in primary school had lower odds of depression compared with counterparts in secondary school (aOR=0.02, p=0.003) and (aOR=0.03, p=0.005), respectively. Caregivers' anxiety was associated with having a child with: another comorbidity (aOR=1.93, p=0.020), a history of epilepsy-related injuries (aOR=2.37, p=0.030), three or more admissions (aOR=2.98, p=0.015) and caregiver age between 41 to 50 years (aOR=3.06, p=0.042). **Conclusion:** Depression and anxiety are prevalent among caregivers of CWE. The findings indicate a need for the integration of mental health services within paediatric neurology clinics to support caregiver well-being.

125. Ewaldo, V. K., Farida, M., Tumaini, J. N., et al… (2025). Fatty Liver Disease and its Correlates among People Living with HIV/AIDS Attending Care and Treatment Clinic at Temeke Regional Referral Hospital in Dar es Salaam. *Tanzania Medical Journal,* Vol. 36 (2). Doi:10.4314/1pym3225

Abstract

Background: Fatty Liver Disease (FLD) is projected to be the leading cause of chronic liver disease among People living with HIV (PLHIV). **Broad objective:** This study aimed at determining the magnitude and the associated factors for Fatty Liver Disease among People living with HIV attending Care and Treatment Clinic (CTC) at Temeke Regional Referral Hospital in Dar es Salaam, Tanzania. **Methodology:** A hospital-based descriptive cross-sectional study was conducted between September and November 2020. Consenting adults aged ≥18 years and living with HIV, were enrolled in the study. A questionnaire with structured questions was used to collect socio-demographic, anthropometric measurements and clinical characteristics. Patients were fasted for a minimum of 8 hours before sonography and taking samples for lipid profile. Abdominal Ultra sonography (USS) was performed using B-mode and 3.5 MHz convex probe transducer (Dawei-DW 580, China, 2020) by a single trained investigator and confirmed by an experienced Radiologist; discrepancies were discussed by revisiting the images. FLD was defined as an increase in liver echogenicity compared to the right kidney. Independent predictors of FLD were analyzed using multivariate logistic regression; p value of < 0.05 was considered to be statistically significant. **Results:** A total of 454 patients were enrolled into the study. FLD was visible from 118 (25.9%) (95% CI 22.0%-30.3%) patients. Factors significantly associated with FLD at multivariate analysis were; age group 40-60 years (aOR 1.74; 95% CI: 1.02 – 2.96 p=0.043), overweight (aOR 1.92; 95%CI: 1.05-3.51: p =0.034), obesity (aOR 3.46; 95% CI: 1.80 – 6.65: p < 0.001) and dyslipidemia (a OR: 2.63 95%CI: 1.58-4.39; p < 0.001). HIV viral load status and duration on combination antiretroviral therapy were not significantly associated with FLD. **Conclusion and Recommendations:** One out of four PLHIV at Temeke Regional Referral Hospital CTC had Fatty liver Disease. Factors associated with FLD were age 40-60 years, overweight, obesity and dyslipidemia. We recommend weight reduction and regular screening for FLD among PLHIV with above risk factors.

126. Ezekiel, M.J., Kagaruki, M.O., Mpimbi, J.J., *et al*… (2025). Factors Affecting Utilisation of Partograph among Healthcare Workers in Bukoba District Council,

Kagera Region, Tanzania. ***East African Journal of Health and Science*****, Vol. 8(2). Doi:10.37284/eajhs.8.2.3233.**

Abstract

The World Health Organization (WHO) acknowledges that the effective use of a partograph helps prevent maternal and neonatal deaths, identify abnormalities, and inform appropriate labour management. In Tanzania, the national Emergency Obstetric Neonatal Care (EmoNC) assessment has consistently reported low utilisation of partographs. However, little is known about the local factors hindering partograph use. Therefore, this study assessed factors affecting the utilisation of partographs among healthcare workers in Health facilities in Bukoba DC in the Kagera region. To address this, a quantitative descriptive cross-sectional design was adopted. The sample size for this study comprised 224 nurses and 79 clinicians recruited from Bukoba DC. Stratified random sampling was utilised to select study participants from the identified health facilities. Data were collected through structured questions, and data analysis was achieved through descriptive and multivariate analysis using the Statistical Package for Social Science (SPSS version 27). The study found that 80.8% of healthcare workers (HCW) used the partograph, while 19.2% did not. Its use was correlated with age and educational attainment. HCWs who were 27 years of age or older were 10% less likely than those under 26 to use the partograph (AOR = 0.904, CI 95% = 0.834-0.979, p = 0.013). Compared to those with less than two years of college education, HCWs with three years or more were 1.1 times more likely to do it (AOR = 1.141, CI 95% = 1.054-1.235, p = 0.001). HCWs who performed 6–10 deliveries in a 24-hour shift were also 9.6% less likely to use the partograph than those who performed 1–5 deliveries. Similarly, compared to those in the reproductive and child health (RCH) department, healthcare workers in the labour ward unit were 9.9% less likely to use the partograph (AOR = 0.901, CI 95% = 0.822-0.988, p = 0.027). The study shows that while most healthcare workers use partographs, there are gaps in knowledge and attitudes about their use, especially in reducing maternal and newborn deaths. To improve this, facilities should prioritise resources, implement continuous training, and ensure regular availability of partograph forms and monitoring equipment.

127. Faqih, H.M., Nondo, R.S., Otieno, J.N., ***et al*****… (2025). Ethnobotany and Antimicrobial Activity of the Selected Medicinal Plants Used for the Management of Microbial Infections in Pemba Island, Tanzania.** ***Tanzania Journal of Health Research*****, Vol. 25(3). Doi:10.4314/thrb. v26i3.9.**

Abstract

Introduction: Microbial infections are among the most life-threatening factors worldwide, killing millions of people annually. The high number of deaths is partly due to the antimicrobial resistance of some microbes to available antimicrobial agents on the market. On the other hand, local communities have used medicinal plants to manage microbial-related infections for a long time, but most of these plants are not well documented or even evaluated. This study aims to contribute to the documentation and evaluation of medicinal plants reported to be used for microbial infection management. The data recorded may be used for further research in the discovery of new antimicrobial agents, thereby saving the lives of people in the future. **Methodology:** An

ethnobotanical survey was conducted to collect data from 42 local informants through semi-structured interviews in Pemba Island. The plants with higher fidelity levels were selected for antimicrobial assays whereby disc diffusion and microdilution methods were used. Results: A total of 117 plants belonging to 48 families were reported for use in the management of microbial infection conditions. Fever scored the highest Informant consensus factor (ICF) of 0.76 showing a high degree of agreement on the potential plants used for fever. Azadirachta indica scored the highest Fidelity Level (FL) of 100% for fever showing the potentiality of the particular plant species. This study evaluated plant species commonly used for the management of microbial infections in vitro for antimicrobial activity against bacteria and fungi strains. Results obtained show that the zones of inhibition for the active plant species ranged between 9.5mm and 18mm. The MICs of the active plant species ranged from 0.625mg/mL to 2.5mg/mL. **Conclusion:** The findings show that most of the medicinal plant species used by the Pemba community have notable activity against S. aureus, E. coli, and K. Pneumoniae which are human pathogens.

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128. Fatima, M., Obrey, U. (2025). Clinical Diagnosis of Charge Syndrome: A Case Report in a Low-Resource Setting. *Tanzania Medical Journal,* Vol. 36 (2). Doi:10.4314/p9se7c91

Abstract

Introduction: The Coloboma of the eye, Heart defects, Atresia of the choanae, Retardation of growth and development, Genitourinary anomalies, and Ear abnormalities (CHARGE) syndrome is a rare, autosomal dominant but usually sporadic condition with an estimated prevalence of 1 in 100,000 births. An early diagnosis of CHARGE syndrome is challenging especially in our settings with the absence of advanced genetic testing thus leading to neglect and under-reporting of similar cases. We highlight application of the existing modified diagnostic criteria to diagnose CHARGE cases in resource-limited settings like ours, where genetic testing is difficult to access. **Case Presentation:** We report a male African neonate born at term and referred from a nearby district hospital immediately post-delivery due to respiratory distress with cyanosis and multiple congenital anomalies. He was noted to have dysmorphic features, bilateral microphthalmia, and severe microtia with facial palsy. He also had ankyloglossia and hypertelorism of the nipples and was noted to have a unilateral right-sided choanal atresia after failure to pass a nasogastric tube and cotton wisp test. Cardiovascular and genitourinary screening detected conotruncal heart defect and unilateral cryptorchidism with left solitary kidney respectively. Based on his presentation and workup that could be completed in the ward, there was a high index of suspicion of CHARGE syndrome. Application of the updated Blake criteria revealed several major and minor features consistent with the diagnosis, to be confirmed on further multidisciplinary workup. The infant was discharged home in relatively stable condition during the second week of life, with planned follow-up at the cardiology, ophthalmology, and ENT clinics. Unfortunately, he passed away at home before definitive interventions could be initiated, likely due to complications related to his underlying condition.

Keywords: *Charge syndrome, Choanal atresia, Microphthalmia, Microtia.*

129. Felician, E.K., Urio, L., Majigo, M., *et al*... (2025). Aetiology, antimicrobial susceptibility patterns and factors associated with bacteriuria among HIV-infected women attending Prevention of Mother-to-Child Transmission (PMTCT) clinic at Bukoba Municipality, Tanzania. *Plos one,* Vol. *20*(3). Doi: 10.1371/journal.pone.0311474

Abstract

Background: Bacteriuria is the detection of significant bacteria in urine in the presence or absence of signs and symptoms of urinary tract infection (UTI). Bacteriuria in pregnant and lactating HIV-infected women can cause serious complications to women and fetuses for pregnant women. Due to the importance of bacteriuria, we determined the etiology, antimicrobial susceptibility patterns, and factors associated with bacteriuria in HIV-infected women. **Methods:** We conducted a cross-sectional study from January to April 2022 among HIV-infected women attending the Prevention of Mother-to-Child Transmission (PMTCT) clinic at Bukoba Municipality, Tanzania. Clean-catch midstream urine specimens were collected for culture on MacConkey and blood agars. We used colonial characteristics, Gram staining reactions, and biochemical tests to identify bacteria isolates. Data were collected using a structured questionnaire. We used STATA version 15.0 for analysis. An association with bacteriuria was performed using modified poisson regressions. A p-value ≤ 0.05 was regarded as statistically significant. **Results:** Of the 290 participants, 66 (22.8%) had significant bacteriuria. The predominant bacteria isolates were *Escherichia coli* 21 (31.8%). Among gram-negative bacteria, 17 (34.0%) were extended-spectrum beta-lactamase producers, and 1 (25.0%) of *Staphylococcus aureus* were Methicillin-resistant. *Escherichia coli* showed a high rate of resistance against trimethoprim-sulfamethoxazole 21 (100%), and amoxicillin clavulanic acid 20 (95.0%). *Staphylococcus aureus* was highly resistant to penicillin 4 (100%) and trimethoprim-sulfamethoxazole 4 (100%). The proportion of multi-drug resistant (MDR) strains was 45 (68.2%). **Conclusions:** The prevalence of bacteriuria in HIV-infected women was relatively high. The pathogens were most resistant to trimethoprim-sulfamethoxazole, penicillin and amoxicillin clavulanic acid and more than two-third were MDR. The findings emphasize that the use of antimicrobial agents should be supported by culture and Antimicrobial Susceptibility Testing (AST) results.

130. Felix, S., Ngowi, B., Chaula, R., *et al*… (2025). Experiences of Health Research Data Sharing Among Researchers in Sub-Saharan Africa: Cross-Sectional Study. *JMIR Formative Research,* Vol. 9. Doi:10.2196/6941

Abstract

Background: Digital platforms play a vital role in improving the availability and access to health research outputs, enhancing the engagement of policy makers and practitioners in the research processes. Despite their potential, it needs to be explored how digital platforms are used to manage and share health research datasets and publications, and to translate research findings among health networks or institutions in sub-Saharan Africa (SSA). **Objective:** This study aimed to assess the practices of health research data management, including sharing among researchers and their support staff within 3 large research networks for health innovations in SSA. **Methods:** A cross-sectional mixed methods survey was conducted across 3 research networks in SSA, showing

experiences of sharing research data using digital platforms among researchers of 3 large research and innovation networks in SSA and affiliated institutions in the Global North. A total of 160 respondents completed a self-administered web-based questionnaire, and following data cleansing, the survey data were analyzed using both descriptive and inferential statistics. **Results:** Most respondents (91/160, 56.9%) used electronic data collection tools to collect research data. Almost half (79/160, 49.4%) of the respondents have a digital research data management platform. More than half of the respondents shared their research datasets (102/160, 63.8%), and 61.3% (98/160) shared research findings with the research community through different channels. Furthermore, most respondents shared their research datasets and research outputs through institutional data repositories (42/160, 26.1%), scientific conferences (123/160, 76.9%), and journal articles (110/160, 68.8%). This study found that parameters such as sex, professional category (health professional, information and communication technology professional, and data managers), and the role (researcher or student) influence health research data sharing within the community. The results show that the roles of the individual have the strongest association with the sharing of research datasets, followed by years of experience in research, then sex, and profession. Females were less likely to share their research datasets than males. Data managers and information and communication technology professionals exchanged datasets less frequently in the professional group, and the researcher's role was statistically significant in sharing research datasets. **Conclusions:** This study demonstrates that most researchers share research datasets and outputs through various channels. It was further found that digital platforms were essential in managing and sharing research datasets and publications since more than half (85/160, 53.1%) of the respondents have and use digital platforms. In addition, the study identified factors that influenced researchers' practices of sharing research datasets and publications. Furthermore, key gaps limit the sharing of these research datasets, including inadequate infrastructure, insufficient African dataset sharing platforms, a lack of institutional policy, and limited skills to use available platforms.

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131. Francis, M.Y., Minja, E., Dennis, M., *et al*… (2025). Skin Lightening Practice and Its Cutaneous Effects Among Women in Kinondoni Municipality, Dar es Salaam, Tanzania. *Journal of Cosmetic Dermatology*, Vol. 24(9). Doi:10.1111/jocd.70453

Abstract

Background: Individuals who practice skin lightening (SL) may develop various skin conditions, including permanent hyperpigmentation. Despite these adverse effects, people often continue using SL products in an attempt to treat the resulting hyperpigmentation, thereby creating a vicious cycle. The burden of SL among women is unknown in Tanzania. **Study Aim**: This study aimed to describe the practice of SL and its cutaneous effects among adult women in Kinondoni Municipality, Dar es Salaam. **Methodology:** A cross-sectional study was conducted from September 2023 to January 2024, using multistage sampling to select households and participants. Consenting members from 611 households were interviewed and examined. SL was identified through self-reported use of dermo-cosmetic products, verification of ingredients, and evidence of skin changes. Chi square test and Poisson regression were used to assess factors associated with SL practice. Statistical significance was set at $p \leq 0.05$. **Results:** A total of 1192 women with a median

(IQR) age of 32 (26–42) were recruited. About half (52.3%) were married, and 46% had attained primary-level education. The overall prevalence of SL was 54.5%, with significantly higher prevalence among front desk workers (19%, $p < 0.048$) and petty traders (11%, $p < 0.03$). The most frequently used lightening agents were kojic acid (50%) and hydroquinone (34%). The majority (82%) of women practiced SL for beautification purposes, while only 1.3% used it with a medical prescription. Recommendations from spouses, friends, relatives, and cosmetic vendors, as well as product branding, affordability, and advertising significantly increased the likelihood of practicing SL (all $p < 0.05$). **Conclusion**: One in every two women in Kinondoni District was using SL products. The practice was common among front desk workers and petty traders, often following recommendations from friends, relatives, or cosmetic vendors. Health education on the dangers of hazardous cosmetics, along with stricter regulatory control of these products, may help reduce their usage.

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132. Fundo, B., Maganda, B., Katabalo, D., *et. al*... (2025). Knowledge, Attitude, and COVID-19 Vaccination Uptake Among Drug Dispensers in Community Pharmacies: A Cross-Sectional Study. *The East African Health Research Journal*, Vol. 9(1). Doi:10.24248/eahrj. v9i1.820

Abstract

Background: COVID-19 is a respiratory disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2). Drug dispensers are at risk of contracting COVID-19. This study aimed to assess the knowledge, attitude, and COVID-19 vaccination uptake among drug dispensers in community pharmacies. **Methods:** A cross-sectional study was conducted among drug dispensers in community pharmacies in Dar es Salaam from January to June 2022. Participants in the study were pharmacists, pharmaceutical technicians, pharmaceutical assistants, and Accredited Drugs Dispensing Outlets (ADDO) dispensers. The calculated minimum sample size was 360. A stratified sampling technique was used to obtain the number of pharmacies and drug dispensers required for each district. Data was collected using a self-administered, semi-structured questionnaire. To determine the predictors of COVID-19 vaccination status by the drug dispensers, multivariable binary logistic regression was performed. **Results:** A total of 375 participants were included. More than half (57.0%) of participants had good knowledge of COVID-19 vaccines, while 203 (54.1%) of respondents had a positive attitude. About 111 (29.6%) of respondents had received the COVID-19 vaccine. Drug dispensers aged 50 years and above and pharmacists were more likely to have received the COVID-19 vaccine (AOR 58.82; 95% CI, 7.407 to 500.0; P<.001) and (AOR 5.025; 95% CI, 2.062 to 12.346, P=.005), respectively. **Conclusion:** Drug dispensers in community pharmacies possessed a good level of knowledge regarding COVID-19 vaccination; however, gaps in attitude and vaccine uptake persisted. Strengthening educational campaigns through professional associations, utilizing digital platforms for information dissemination, and integrating vaccine promotion into continuing professional development programs can enhance their role in public health response efforts.

133. Gangji, R.R., Malasa, L., Koya, G.D., *et al*... (2025). Peer-Led Neonatal Resuscitation Training: Experience of Kairuki University. *Journal of medical education and curricular development,* Vol. *12*. Doi:10.1177/23821205251358037

Abstract

Background: Neonatal mortality remains a significant public health concern in Tanzania, with birth asphyxia being one of the leading causes. The Helping Babies Breathe program aims to equip providers with essential neonatal resuscitation skills, particularly in resource-limited settings. **Objective:** To assess and document the effectiveness of a peer-led training program on knowledge and confidence in neonatal resuscitation. **Methods:** Helping Babies Breathe-Kairuki University (HBB-KU) initiative; a student-led program including both theoretical and practical components, attended by future and current healthcare professionals (HCPs). Pre- and post-training knowledge tests assessing knowledge and understanding, and self-evaluation tests reporting self-confidence were administered. **Results:** Test results of participants from 2016 to 2023 were analyzed using the paired *t*-test. HBB-KU initiative successfully trained 1389 trainees. A total of 1243 (93.11%) included medical, nursing, and other health-allied science students. Pre (10.63 ± 2.53) and post (14.71 ± 1.60) training knowledge test scores demonstrated statistically significant ($P < .01$) improvements. Confidence prior to training, 213 (15.97%) participants reported feeling "very confident"; however, following training, an increase was noted, reaching 784 (58.72%) participants feeling "very confident," demonstrating a difference of 42.75%. **Conclusion:** The results indicate HBB-KU peer-led training initiative is effective in mitigating knowledge gaps and developing confidence around neonatal resuscitation among participants. Given the resource-limited setting, this accomplishment provides a context for a replicable model where students can teach and train peers, and practicing HCPs may be an efficient method to expand neonatal care in similar circumstances, globally.

134. Gega, Z.D., Lyimo, H.I., Kitua, D.W., *et al*… (2025). Fitz-Hugh-Curtis syndrome: a case study of a frequently missed diagnosis. *Journal of Rare Diseases,* Vol. 4(1). Doi:10.1007/s44162-024-00063-w.

Abstract

Introduction: Fitz-Hugh-Curtis syndrome (FHCS) is a relatively common complication of pelvic inflammatory disease. However, this diagnosis is frequently overlooked due to its nonspecific symptomatology that often mimics hepatobiliary disorders. This report presents a case of FHCS and offers a review of pertinent clinical considerations. We describe a case of a 33-year-old sexually active female previously treated for vaginal discharge syndrome, who presented to our facility with worsening right upper quadrant pain. Initial laboratory and imaging findings were inconclusive. However, diagnostic laparoscopy revealed perihepatic "violin string" adhesions consistent with FHCS. **Conclusion:** This case underscores the importance of considering FHCS in the differential diagnosis of right upper quadrant pain, especially in individuals with a history of pelvic inflammatory disease. Awareness of this syndrome and its clinical manifestations is crucial for prompt diagnosis and appropriate management.

135. Ghaimo, F. E., Mzilangwe, E.S., Chacha, S., *et al*… (2025). Prevalence and factors associated with alcohol use disorders among people living with HIV attending care and treatment centers at Kilimanjaro, Tanzania: A cross-sectional study. *Plos one*, Vol. 20(2). Doi: 10.1371/journal.pone.0318120

Abstract

Background: Alcohol use disorders (AUD) are prevalent among people living with HIV (PLHIV), with 2–6 times higher than in the general population. These conditions are linked to increased morbidity and mortality among PLHIV and amplify sexual risk behaviors, thus exacerbating the transmission of HIV. Despite these negative consequences, a paucity of studies has explored this issue in Tanzania. This study aimed to determine AUD's prevalence and associated factors among PLHIV attending Care and Treatment Centers (CTCs). **Methods:** A multifacility-based cross-sectional study was carried out among 532 PLHIV attending four CTC centers in Moshi Municipal, Kilimanjaro. A multistage cluster systematic sampling method was utilized to choose CTCs and participants. Data were collected using standardized tools through interviewer administration. Statistical analyses were performed using STATA (version 16). Binary logistic regression model was used to examine the associations between AUD and the independent variables, with odds ratios and their 95% confidence intervals calculated to quantify the strength of these associations. **Results:** The mean age of participants was 46.6 years (SD±13.3). The weighted prevalence of alcohol use disorders (AUDIT ≥ 8) within the past 12 months was 28.2%. Factors significantly associated with AUD in the final model included male sex (AOR = 4.18, P <0.001), healthcare level (reference: tertiary health facility; secondary health facility AOR = 1.80, P<0.001, primary health facility AOR = 9.65, P<0.001), being divorced or widowed (AOR = 2.82, P<0.001), secondary education (AOR = 1.35, P = 0.005), and probable depression (AOR = 2.48, P <0.001).**Conclusion:** The findings revealed a high prevalence of AUD among PLHIV, highlighting the need for policy refinement aimed at enhancing the integration of psychosocial services at CTCs.

136. Ghaimo, F.E., Ng'unda, N.A., Chacha, S., *et. al*… (2025). Alcohol use and alcohol use disorders as a mediator between common mental disorders and antiretroviral therapy adherence among people living with HIV in Tanzania. *AIDS Research and Therapy*Vol. 22(1). Doi:10.1186/s12981-025-00818-5

Abstract

Background: Common mental disorders (CMDs) and alcohol use disorder (AUD) are significant barriers to effective antiretroviral therapy (ART) adherence among people living with HIV (PLHIV), especially in sub-Saharan Africa. Suboptimal adherence to ART contributes to increased morbidity and mortality in this population. CMD and AUD frequently co-occur, with alcohol often serving as a maladaptive coping mechanism for psychological distress, thereby compounding the negative impact on treatment outcomes. Understanding the mediating role of AUD in the relationship between CMD and ART adherence is essential for designing targeted interventions aimed at improving HIV treatment success. **Methods:** A hospital-based cross-sectional analytical study was conducted between August and October 2023 in Moshi Municipality, Kilimanjaro. A

multistage systematic sampling technique was used to recruit participants. Data were collected using structured sociodemographic and interviewer-administered, validated assessment tools. Statistical analyses included one-way ANOVA for continuous variables, chi-square tests for categorical variables, and logistic regression to estimate odds ratios (ORs) with 95% confidence intervals. Mediation analysis was conducted using R version 4.4.2, with significance set at $p < 0.05$. **Results:** The study involved 532 participants, with an average age of 46.6 ± 13.3 years; 71.4% were female. The prevalence of depression, anxiety, and ART non-adherence was 14.8%, 12.4%, and 10.7%, respectively. Among men, depression and anxiety were both significantly associated with ART non-adherence in model1 and 2 respectively (depression OR = 5.38, 95% CI: 1.80-16.08; OR = 5.10, 95% CI: 1.55–16.82. Anxiety OR = 5.12, 95% CI: 1.63–16.12; OR = 5.30, 95% CI: 1.48–18.92). Among women, only depression significantly increased ART non-adherence in all models, respectively (OR = 2.50, 95% CI: 1.16–5.36; OR = 2.51, 95% CI: 1.13–5.59; OR = 3.26, 95% CI: 1.34–7.95). Alcohol use disorder significantly mediated the relationship between depression and ART non-adherence more substantially than alcohol use alone, with mediation effects up to 45.5%. **Conclusion:** Depression is significantly associated with ART non-adherence in both genders, and AUD is a key mediator, especially among male participants. These data support the integration of mental health and substance use care into HIV services, with attention to gender-specific risk factors.

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137. Gimonge, J., Muhunzi, D., Edward, Z., *et al*… (2025). The Incidence, AssociatedFactors, and in-Hospital Outcomes of Cardiac-Surgery-Associated Acute Kidney Injury Among Children Undergoing Cardiac Surgery at Jakaya Kikwete Cardiac Institute. A Hospital-Based Prospective Cohort Study. *Health Science Reports,* Vol. 8(16). Doi:10.1002/hsr2.70923

Abstract

Background: Aims Cardiac surgery-associated acute kidney injury (CSA-AKI) is one of the serious complications that can potentially increase the risk of morbidity, long-term adverse effects, and mortality. Despite the advances in the care and increased survival of children post-cardiac surgery, CSA-AKI is still a big problem with considerable morbidity and mortality in high-risk children. Prevention of CSA-AKI is important for survival and the minimization of long-term adverse outcomes of children after cardiac surgery. This study aimed to determine the proportion of acute kidney injury, associated risk factors, and in-hospital outcomes among children undergoing cardiac surgery at the Jakaya Kikwete Cardiac Institute (JKCI). **Methodology:** A prospective cohort study was conducted to determine the proportion, risk factors, and in-hospital outcomes among children who developed cardiac surgery-associated acute kidney injury (CSA-AKI) at JKCI. Data collection was done using a structured questionnaire, Intensive care unit (ICU) chart review, and hospital records. Diagnosis of CSA-AKI was done based on KDIGO criteria. Serum creatinine was measured pre-operatively and subsequently, daily up to day seven postoperatively to determine the presence of CSA-AKI. **Results:** A total of 210 children were recruited into the study, of which 120 (57.1%) were males. The median age of the study participants was 36 months. Of the recruited children, 23 (11.0%) developed cardiac surgery-associated acute kidney injury (CSA-AKI). Intraoperative hypotension [ARR = 2.7; 95% CI 1.37-

5.26; p-value = 0.004], intraoperative platelet transfusion [ARR = 2.7; 95% CI 1.37-5.22; p-value = 0.004], and two or more days on mechanical ventilation [ARR = 2.3; 95% CI 1.1-4.71; p-value = 0.019] were found to be significantly associated with CSA-AKI. There were 8 (3.8%) deaths; of these, 7 (87.5%) were from children who developed CSA-AKI. Children who developed CSA-AKI had, on average, a longer ICU stay, with a mean difference of 1.959 days. **Conclusion:** This study's findings highlighted the prevalence and severity of cardiac surgery associated with acute kidney injury in pediatric patients. The identified risk factors, such as intraoperative hypotension, platelet transfusion, and prolonged mechanical ventilation, provide crucial insights for improving patient outcomes. The study's results also emphasize the need for interventions targeting these modifiable factors to reduce mortality among children undergoing cardiac surgery.

138. Gimonge, J., Muhunzi, D., Nkya, D. (2025). Fatal tricuspid valve inflow obstruction and inferior vena cava syndrome in a child with advanced Wilms' tumor: a case report. *Journal of Medical Case Reports,* Vol. 19(1). Doi: 10.1186/s13256-025-05514-6.

Abstract

Background: Wilms' tumor is the most common primary renal malignancy in children. Although tumor extension into the inferior vena cava occurs in 4–10% of cases, intracardiac involvement is rare, reported in only 1%. In resource-limited settings, delayed diagnosis and inadequate access to specialized care may lead to fatal complications. **Case presentation:** We report the case of an 8-year-old Tanzanian girl presenting with a 6-month history of progressive abdominal distension, dyspnea, and lower limb edema. Imaging revealed a large right-sided renal mass with extension into the inferior vena cava and right atrium, causing tricuspid valve inflow obstruction. Despite receiving one dose each of intravenous actinomycin D and vincristine, her condition rapidly deteriorated, culminating in cardiogenic shock and death within 7 days of admission. **Conclusion:** This case underscores the importance of early recognition, prompt diagnosis, and multidisciplinary management of Wilms' tumor with intracardiac and vascular extension. It highlights the need to strengthen pediatric oncology, surgical, cardiac, and intensive care infrastructure in low-resource settings to avoid preventable fatalities.

139. Ginjupalli, R., Cole, K., Manji, K.P., *et al*… (2025). Systematic review of risk assessment tools for post-discharge mortality among children in sub-Saharan Africa. *PLOS global public health,* Vol. 5 (7). Doi: 10.1371/journal.pgph.0004788.

Abstract

Introduction: Post-discharge mortality is increasingly recognized as a major contributor to the high burden of childhood mortality in sub-Saharan Africa. Accurate identification of children at risk for post-discharge mortality is critically important to inform interventions to reduce deaths following hospital discharge. **Our objective** was to describe the current state of development, validation, or implementation of risk assessment tools for post-hospital discharge mortality (PDM) in sub-Saharan Africa. We conducted a systematic review of publications on risk assessment tools for PDM among children aged 0–18 years in sub-Saharan Africa. We searched CABI Global Health, Cochrane Reviews, Cochrane Trials, ProQuest Dissertations and Theses, Embase,

PubMed, and Web of Science with no date or language restriction. We included publications if they described a tool/model with weights assigned to variables to quantify the risk of PDM, included children, and were conducted in sub-Saharan Africa. We determined the level of evidence for tools using the Evidence-Based-Medicine Working Group hierarchy. Of 4,893 publications screened, 289 full texts were reviewed, and seven publications that reported 23 risk assessment tools for PDM among children in sub-Saharan Africa were identified. These studies enrolled 49,669 total participants (3.6%, n = 1,795 experienced PDM). There was substantial heterogeneity in identified risk factors, although all identified malnutrition as a risk factor for PDM. All risk assessment tools had fair (i.e., area under the receiver operating characteristic curve [AUC] ≥0.70) or good (AUC ≥ 0.80) discriminatory value in internal validation. Only two risk assessment tools had been externally validated, and none were implemented. Existing risk assessment tools to identify children at risk for PDM in sub-Saharan Africa lack broad validation and implementation. Malnutrition is a common risk factor for PDM. Further studies are needed to validate and implement such tools to reduce PDM among children.

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140. Gitanya, M.P., Kamala, B., Koenker, H., *et al…* (2025). Implementation performance of routine insecticide-treated nets distribution through the health facilities in mainland Tanzania: 5 years (2018–2022) experience. *Malaria Journal*, Vol. 24(1). Doi:10.1186/s12936-025-05708-9

Abstarct

Background: The distribution of insecticide-treated nets (ITNs) through health facilities helps increase and sustain access to ITNs, targeting biologically vulnerable populations. However, their effectiveness in terms of issuance rates has yet to be assessed over time in Tanzania. **Methods:** Monthly DHIS-2 data on ITN distribution from health facilities were extracted from 6,790 facilities from January 2018 to December 2022. The Generalized Estimating Equation (GEE) was used to model the marginal performance trend over time for ANC and EPI separately. **Results:** Across 5 years, ANC had an issuance rate of 83%, while EPI averaged 70%. Issuing started at 44% and 34% in 2018 and increased to 93% and 80% in 2022 for ANC and EPI, respectively. Over the 5-year average, the public facilities performed better for both ANC (88%) and EPI (76%) compared to private facilities (53%) and (42%), respectively. Dispensaries and hospitals performed better than health centres and clinics at ANC and EPI. Rural areas had higher issuance (72%) during ANC visits compared to urban areas (51%). Across epidemiological strata, ITN issuing rates during EPI activities were notably higher in high (79%) compared to low (54%) transmission epidemiological strata. **Conclusions:** By 2022, Tanzania had substantially improved the ITN issuance rates via ANC and EPI in all health facilities compared to 2018. However, gaps remain in EPI, private, and urban facilities; targeted efforts are needed to achieve higher ITN issuance rates. Future studies to explore the reasons for differences among the analysed variables will help understand additional characteristics of high-performing facilities.

141. Gladys, R.M., Fasina, O.F., Robinson, M., *et al*… (2025). Erratum: The Original Version of this Article (1) Unfortunately Contained two Mistakes. *Tanzania Medical Journal,* Vol. 36(3). Doi:10.4314/dtmh8j25

Abstract

Author, “Fasina O. Folorunso” is not affiliated with “Food and Agriculture Organization of the United Nations, Lusaka, Zambia” and never has been. Correct affiliations are as provided below. In addition, the article text contained errors in the abstract and PDF version. The text “It causes a loss of 3.7 million Disability Adjusted Years (DALYs) per year and about 8.6 billion USD of economic losses” under the abstract should correctly read as "It causes a loss of 3.7 million disability-adjusted life years (DALYs) and about 8.6 billion USD of economic losses per year”. Current Archives Announcements About Search.

142. Gomba, S., Mhina, C., Sandi, F., *et. al*… (2025). Ocular manifestations and factors associated with haematological malignancies at two tertiary hospitals in Tanzania. *Journal of Ophthalmology of Eastern, Central and Southern Africa (JOECSA)*, Vol. 14(01). Doi:10.64666/joecsa.2025.18/

Abstract

Background: Ocular involvement in haematological malignancy may profoundly affect the visual outcome of survivors, although little about this is known in our setting. Haematological malignancies include lymphoma, leukemia, and multiple myeloma. Ocular manifestations may be the initial diagnostic symptoms or the earliest identifiers for relapse or progression of haematological malignancies. Ocular involvement can result from direct malignant infiltration or indirect sequel of haematological cellular derangement. **Objective**: This study aims to determine the burden of ophthalmic manifestations, describe the manifestations and the factors associated with haematological malignancies among patients attending Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI) in Dar es Salaam. **Methods**: Hospital-based cross-sectional study at MNH and ORCI from June 2021 to January 2022. Patients who met the inclusion criteria were recruited consecutively. Data analysis was done with SPSS version 23. **Results**: A total of 99 patients with haematological malignancies were recruited, 61.6% were males. The agerange was 2 to 77 years with a mean age of 29 years. Two-thirds (61.6%) of the participants had ophthalmic manifestations. Posterior segment manifestations were the most common with roth spots (31.1%) and intraretinal haemorrhage (21.0%) as the most frequent presentations. Vision-threatening manifestations such as sub-hyaloid haemorrhage and optic nerve swelling were present in 6.7% and 11.1% of patients respectively. Direct infiltration was present in 15.15% of the patients. Low haemoglobin level was the statistically significant factor associated with ocular involvement among the study participants. **Conclusion**: The prevalence of ophthalmic manifestations of haematological malignancies at MNH and ORCI was significantly high. Roth spots and intraretinal haemorrhages were the most common manifestations. Direct malignant ocular infiltrations were present in a few patients. Patients with haemoglobin level of 8g/dl or less had four times increased odds of having ocular manifestations. A comprehensive ophthalmic exam

needs to be done for all patients with haematological malignancies for early detection and intervention.

143. Goodman, R.N., Moyo, S.J., Memelis, I., *et. al*… (2025). Comparative genomics of blood and faecal E. coli and K. pneumoniae isolates from neonates with bloodstream infections in Tanzania. *Communications Biology*, Vol. 8(1). Doi:10.1038/s42003-025-09008-5.

Abstract

Bloodstream infections (BSIs) are a major cause of hospitalisation and death for children under the age of five in sub-Saharan Africa, with Gram-negative bacteria such as Klebsiella pneumoniae and Escherichia coli among the most common causative agents. These bacteria usually colonise the human gastrointestinal (GI) tract, which has been identified as a reservoir for invasive infections into extra-intestinal environments such as the urinary tract and bloodstream. In this study we used comparative genomics to compare hybrid genome assemblies of blood and faecal bacterial isolates taken from the same patients (all neonates under 19 days old) to determine if the BSI associated isolates and the GI tract associated isolates were related. Multiple pairs of highly related E. coli and K. pneumoniae were found, suggesting that translocation between the GI tract and the bloodstream occurred in multiple cases of BSI. We also highlight key virulence genes and acquired mutations that are indicative of pathogenic strains capable of BSI. These findings expand our understanding of the Gram-negative bacteria involved in BSI pathogenicity and could help guide targeted interventions to prevent future BSI infections in neonates.

144. Grace, S.B., Mboka, J., Christina, V.M. (2025). Lumbar Spine Degenerative Disease among Young Adults Referred for Lumbar Spine Magnetic Resonance Imaging at Muhimbili Orthopedic Institute. *Tanzania Medical Journal*, Vol. 36(1). Doi: 10.4314/axvjeq63.

Abstract

Background: Low back pain and radiculopathy are major global health concerns, with lumbar disc degeneration increasingly prevalent among young adults. However, data on its occurrence in this demographic region is limited, underscoring the need for targeted research. **Objective:** To assess the magnitude of spine degenerative disease and identify related risk factors among young adults undergoing lumbar spine MRI at Muhimbili Orthopedic Institute (MOI). **Methods:** A hospital-based cross-sectional study was conducted at MOI) from November 2022 to April 2023, enrolling young adults experiencing lower back pain with or without radiculopathy who were referred for lumbar spine MRI. Comprehensive data collection included socio-demographic information, risk factors, and clinical symptoms through structured questionnaires. MRI findings were documented using a specially designed data collection tool. Statistical analysis was performed using SPSS version 23, with Chi-square and Fisher's exact tests used to examine associations between variables. **Results:** This study involved 88 patients between the ages of 20 and 39 years (mean age 32.34), with females comprising 54.5% of the study participants. Lumbar spine degenerative disease was identified in 92% of participants. The most prevalent symptom was lower back pain accompanied by radiculopathy (73%), while disc bulge was the most common MRI finding

(89.8%). There was a significant association between lower back pain with radiculopathy and lumbar nerve root compression (P<0.05), as well as between high BMI and the presence of lumbar spine degenerative disease (P<0.05). **Conclusion:** Ninety-two percent of young adults referred for lumbar spine MRI at MOI had lumbar spine degenerative disease. The most common symptom was lower back pain with radiculopathy, and the most frequent MRI finding was a disc bulge. The presence of nerve root compression on MRI correlated with lower back pain with radiculopathy, and a high BMI was significantly linked to lumbar spine degenerative disease. **Recommendation:** Further studies are needed to explore the progression of degenerative changes over time, as well as preventive strategies and early interventions aimed at high-risk groups, to reduce the burden of lumbar spine degeneration in younger populations.

Keywords: *Lumbar spine degenerative disease, young adults, Magnetic Resonance Imaging, Lower back pain.*

145. Grahan, S.M., Chokotho, L., Mkandawire, N., *et al*… *(*2025). Injury: a neglected global health challenge in low-income and middle-income countries. *The Lancet Global Health,* Vol. 13(4). Doi:10.1016/s2214-109x(25)00074-9.

Abstract

An injury is any harm or damage to the body that disrupts its normal structure or function, whether accidental or intentional. Injuries can arise from various causes, including road traffic collisions, falls, drowning, burns, poisoning, and acts of violence—whether self-inflicted or directed at others. The Global Injury Group was established in August, 2024, with funding from the global health programme of the UK's National Institute for Health and Care Research and the Medical Research Council. This equitable partnership is a collaboration of researchers across high-income countries (HICs) and low-income and middle-income countries (LMICs) with the shared vision of improving care of the injured via research. Members of the group include clinicians, surgeons, anaesthetists, nurses, physiotherapists, epidemiologists, statisticians, educationists, social scientists, health economists, information specialists, and patients, thus reflecting a multidisciplinary approach needed to effectively deliver injury care research. Injuries account for 8% of all worldwide deaths (4·4 million people annually). Among individuals aged 5–29 years, the top three causes of death are injury-related, including road traffic collisions, murder, and suicide.[1] For every injury-related death, up to 50 people sustain temporary or permanent disabilities, resulting in more than 220 million disability-adjusted life-years (DALYs) lost each year.[1] This loss of DALYs is estimated to be 10% of all years lived with disability worldwide, which is more than tuberculosis, HIV, and malaria combined. Individuals in LMICs sustain injuries at disproportionately higher rates than those in HICs, with 1 billion people hospitalised in LMICs each year for the treatment of an injury. Injuries in LMICs account for 90% of injuries globally and 83% of injury-related deaths. Young men are most at risk: around half of worldwide deaths from injury occur among men aged 15–29 years.[1] Injuries to adult males can place a considerable burden on national economies via lost productivity. Between 2015 and 2030, an estimated US$7·86 trillion is expected to be lost globally due to injuries, with LMICs projected to experience losses that are almost 50% greater than HICs.Road traffic collisions are the most

common cause of injury-related death and disability in LMICs, costing countries 5% of their gross domestic product on average.[5] Despite lower rates of vehicle ownership than in HICs, LMICs account for 90% of global road traffic fatalities. This disproportionate burden stems from several factors, including poorly maintained roads, minimal separation between vehicles and pedestrians, weak traffic legislation, and inadequate law enforcement. As economic development accelerates and vehicle use rises, the gap between motorisation and road safety infrastructure is expected to widen, further increasing the mortality and morbidity from road traffic injuries. Injuries have traditionally been viewed as consequences of random events or accidents. This unmodified assessment of injuries has led to its historical neglect in public health research and policy. However, injury-related death and disability are largely preventable with injury prevention schemes and accessible, high-quality trauma care systems. If injury-related death rates in LMICs were to be reduced to the levels seen in HICs, 2·1 million lives would be saved and 49–52 million DALYs could be adverted each year. Trauma care systems should reflect the patient journey, including prehospital, hospital, outpatient care, and rehabilitation care. In HICs, improvements in trauma care systems have been shown to save lives and reduce disability that result from injuries.[1] However, up to 80% of severely injured people die before reaching hospital in many LMICs.[7] These deaths could be prevented with simple, on-the-scene emergency procedures, better medical transport infrastructure, and shorter transport times to hospital. Surgery is an essential part of life-saving intervention following an injury. However, at least 4·8 billion people worldwide are estimated not to have timely access to safe, affordable surgery, and more than 2 billion people do not have any access to surgery and anaesthesia—ie, 94% of individuals in LMICs compared with 15% in HICs. Rehabilitation is a core component of the trauma care pathway and is rarely accessible in LMICs. Few injured patients have access to rehabilitation services, which are critical to minimising disability by improving function and independence and reducing secondary complications. Musculoskeletal injuries (ie, fractures and broken bones) are the most common type of injury requiring medical treatment and account for 78% of injury related disabilities. Africa has the highest incidence of musculoskeletal injuries in the world, with a considerable increase in injury burden possibly because its population is expected to double by 2050. However, little research has been conducted on the burden of musculoskeletal injuries in Africa or any LMIC, let alone on the longer-term consequences and wider societal impact. The Global Burden of Disease study offers the most robust estimates of burden of cause-specific injuries, with data on incidence, deaths and DALYs; however, estimates for LMICs are based on scarce data and there is no detail provided on the nature of the injury sustained or outcomes.Reducing the number of injuries and advancing injury care in low-income settings is crucial to improve outcomes for individuals, communities, and wider societies. These efforts are a crucial step toward achieving the UN Sustainable Development Goal (SDG) 3, which aims to promote good health and wellbeing for all. Additionally, they contribute to SDG 16, which aims to reduce interpersonal violence, a major contributor to injury-related morbidity and mortality. In particular, there is an urgent need for focused research to guide the prevention and effective management strategies for musculoskeletal injuries, particularly across sub-Saharan Africa. Addressing this gap is key to reducing injury-related morbidity and mortality and fostering equitable health outcomes globally. The Global Injury Group hosted its inaugural research summit in Cape Town, South Africa, in January 2025, bringing together injury care experts from across sub-Saharan Africa. The summit featured

representation from low-income (Malawi), lower-middle-income (Tanzania), and upper-middle-income (South Africa) countries, fostering a diverse and inclusive dialogue. During the summit, we identified key priority areas to guide our future research (panel). We welcome collaborations from researchers, institutions and organisations worldwide who share our vision of improving the care of the injured—a neglected global health challenge in LMICs.

146. Gumanneh, H., Bowers, S., Miyaye, E., *et al*... (2025). Long-term perspectives of Muslim and Christian religious leaders on an educational intervention about family planning in Tanzania. Global public health, Vol. 20(1). Doi:10.1080/17441692.2025.2473455.

Abstract

Background: Family planning (FP) education is essential in many sub-Saharan African countries, where there is a high unsatisfied demand for FP despite its availability at healthcare facilities free of charge. Male opposition, limited health knowledge, and concern about compatibility with religious beliefs are major causes of unsatisfied demand. Previous studies have shown that partnerships with religious leaders can increase family planning knowledge and uptake. However, most studies have observed short-term effects of educating religious leaders, and little is known of the long-term sustainability of such an intervention. In this study, we interviewed Christian religious leaders 4–5 years after, and Muslim religious leaders 1.75 years after, they received an educational intervention on the medical and religious aspects of FP. We sought to assess the long-term impacts of this FP educational intervention on community discussions of FP and to identify continued challenges. We found that, even years after the intervention, religious leaders continued to educate community members in multiple settings and remained willing and motivated to teach about FP. These results suggest that educating religious leaders is a sustainable and potentially highly cost-effective intervention to improve knowledge of and access to FP in communities where cultural norms and religious beliefs may pose barriers.

147. Guo, Y., Zhu, Y., Fatmi, Z., *et al*… (2025). Flood exposure and intimate partner violence in low- and middle-income countries. Doi:10.1038/s44221-025-00389-9.

Abstract

Intimate partner violence (IPV) is a global public health challenge, causing physical and psychological harm to victims. Although studies have explored the impacts of various extreme weather events on IPV, there is still inadequate evidence on the association between flood exposure and IPV on a multi-country or global scale. Therefore, we utilized the Demographic and Health Surveys database to examine this association on a multi-country scale and further explored modification effects of inequality outside and within the household. This study included 340,955 ever-partnered women from 31 low- and middle-income countries across Asia, Africa and Latin America. The results showed that flood exposure was associated with increased prevalence of total IPV (percentage difference 10.78%, 95% confidence interval 8.24–13.38%), physical violence (4.94%, 2.31–7.64%), sexual violence (13.03%, 8.61–17.62%), and emotional violence (17.62%, 14.28–21.06%). We found stronger flood–IPV associations among households with greater inequality. Our findings indicate additional harm associated with flood exposure for women in

low- and middle-income countries, emphasizing the role of gender inequality under climate change.

148. Guo, Y., Zhu, Y., He, C., et al... (2025). Cyclone exposure and mortality risk of children under 5 years old: An observational study in 34 low-and middle-income countries. *PLoS Medicine*, Vol. 22(9). Doi: 10.1371/journal.pmed.1004735.

Abstract

Background: Climate change has exacerbated the frequency, intensity, and impacts of extreme weather events (EWEs), such as tropical cyclones. However, the increasing impact of tropical cyclones on child mortality, especially in low- and middle-income countries (LMICs), remains understudied. **Methods and findings**: Utilizing individual-level data from the Demographic and Health Surveys, we conducted a sibling-matched case-control study to assess the impact of cyclone exposure over the past 3 months on under-five mortality. The study included 100,798 under-five deaths and 247,445 controls across 34 LMICs from 1993 to 2021. After adjusting for key meteorological and temporal confounders and maternal age, significant positive associations were observed between under-five deaths and cyclone exposure over the past 3 months before death (odds ratio [OR]: 1.038, 95% confidence interval [CI]: 1.002, 1.075; p = 0.041). Specifically, the strongest effects were observed in the first month before death (OR: 1.101, 95% CI: 1.039, 1.166; p < 0.001), diminishing in the second and third months before death. We estimated that cyclone exposure 0-30 days before death may have caused 0.85 million under-five deaths (95% CI: 0.35 million, 1.32 million) in countries exposed to cyclones from 2000 to 2020. As an observational study, its use of self-reported data and dichotomous exposure assessment may introduce recall bias and exposure misclassification, limiting accuracy and representativeness. **Conclusions:** This global analysis demonstrates the substantial under-five mortality risk from cyclones, emphasizing the importance of targeted strategies to enhance community resilience against the growing threat of EWEs on children, such as improving access to water sources and sanitation facilities.

149. Haaland, I., Ogillo, K. (2025). Social iatrogenesis and social risks among queer PrEP users in Dar Es Salaam. *Medical Anthropology*, Vol. 44(1). Doi:10.1080/01459740.2025.2453166.

Abstract

Pre-exposure prophylaxis, commonly known as PrEP, is an HIV-preventative pill taken to reduce the risk of contracting HIV. During a PrEP study in Dar es Salaam among queer PrEP users, this ethnographic study observed how PrEP users experienced novel types of (social) risks and harms, or social iatrogenesis, imposed by the biomedical HIV prevention pill or the PrEP program. These forms of social iatrogenesis related to lack of autonomy, creating demand for PrEP, then removing services, projectivization of PrEP programs, social risks related to fear of stigma by association, and clinical encounters producing multiple understandings of adherence and usage of PrEP.

Keywords: *HIV prevention Queer PrEP users social iatrogenesis social risk stigma Tanzania.*

150. Hafidhi, H.N., Tusaligwe, M., Raphael, Z.S., *et al*… (2025). Factors Influencing Antibiotic Prescribing Decisions among Healthcare Providers in Tanzania: Implications for Antimicrobial Stewardship. *Tanzania Medical Journal*, Vol. 36(4). Doi: 10.4314/wc4d6j52.

Abstract

Introduction: Understanding the factors that influence antimicrobial prescription decisions among healthcare providers is essential for designing more effective antimicrobial stewardship programs to combat antimicrobial resistance (AMR). ***Methodology:*** We conducted a cross-sectional study utiliZing a questionnaire among healthcare providers (doctors, pharmacists, nurses, and laboratory personnel) in Tanzania to explore their knowledge and attitudes towards AMR and antimicrobial use (AMU), as well as the factors influencing their prescribing and dispensing practices. The survey collected information on their educational and professional backgrounds, fields of clinical practice, sources of information on AMR and AMU, and factors influencing their decision-making. Descriptive statistics were used to report healthcare practitioners' levels of practice, knowledge, and attitudes toward AMR and AMU. Binary logistic regression was used to associate sociodemographic attributes with AMR and AMU knowledge. **Results:** Among 138 participants, 37.7% (n=52) were female, with a mean age of 37 ± 10.5 years. AMR/AMU training in the past year was reported by 45.7% (n=63). The main sources of information were the World Health Organization (WHO) guidelines 21.4% (n=71) and national guidelines 20.2% (n=67). Key factors influencing antimicrobial prescriptions were the ready availability at the local level 68.8% (n=95), the potential rise of resistant bacteria 57.2% (n=79), and the economic status of the client 55.1% (n=76). Respondents reported high levels of knowledge in selecting routes of administration 63.8% (n=88) and interpreting microbiological results 63.0% (n=87). In contrast, lower awareness was reported for the National Action Plan for AMR 29.3% (n=40) and the reserve category of antimicrobials 37.7% (n=52). The knowledge scale demonstrated high reliability (Cronbach's alpha = 0.92). Binary logistic regression analysis showed that being a nurse (AOR = 0.10, p = 0.043) and being a laboratory scientist (AOR = 0.27, p = 0.026) were significantly associated with lower knowledge of AMR/AMU. **Conclusion*:*** This study reveals gaps in knowledge and awareness of AMR and AMU among healthcare providers in Tanzania, particularly regarding the National Action Plan and the WHO reserve group of antimicrobials. These findings underscore the need for targeted education and professional development, especially for nurses and laboratory scientists, to strengthen antimicrobial stewardship and reduce AMR risk.

Keywords: *Antibiotic, Antimicrobial stewardship, Prescription decision-making, Healthcare provider, Tanzania.*

151. Haji, H.M., Urio, F., Nkya, S., *et al*… (2025). Utilization of Fetal Hemoglobin Parameters in Predicting Clinical Severity of Sickle Cell Disease: Retrospective Study from a Tanzanian Cohort. *Journal of Blood Medicine,* Vol. 16. Doi:10.2147/JBM.S493425.

Abstract

Background: Fetal hemoglobin (HbF) is found at a measurable amount in red blood cells (RBCs) called F cells. High fetal hemoglobin (HbF) levels are linked with milder forms of sickle cell disease (SCD). However, some patients with high HbF levels still have severe symptoms. This variability has been associated with HbF per F cell (HbF/F cell) concentration; thus, it is hypothesized that high HbF/F cell (≥10 pg) is crucial in determining SCD disease severity rather than the overall HbF and F cell levels. This study assessed the utility of these three HbF parameters as predictors of SCD clinical events in Tanzania. **Methods:** A retrospective cohort study was conducted at Muhimbili University of Health and Allied Sciences, involving 92 SCD individuals aged ≥6 years, not on hydroxyurea, between September 2022 and February 2023. Data was collected from the Sickle Pan-African Research Consortium (SPARCO)-Tanzania registry. HbF/F cell was calculated as: HbF/F cell = (HbF% × MCH pg)/F cell%. STATA version 15 was used to analyze the association between HbF parameters and clinical events measured by ordinal logistic regression. A p-value <0.05 was considered statistically significant. **Results:** Of the 92 SCD participants, the median age was 16 (IQR: 10–21) years, 53 (57.6%) were below 18 years, and males were 48 (52.2%). Eighty-two patients (89.1%) had HbF/F cells below 10pg. Males had significantly higher HbF/F cell levels with a median of 6.4 (IQR: 4.3–9.5) pg compared to females 5.3 (IQR: 3.5–6.5) pg (p-value = 0.004). Although, we did not observe a statistically significant association between HbF/F cell with clinical parameters, increased HbF and F cell percentages correlated with reduced odds of multiple blood transfusions by 11% (p-value = 0.016) and 3% (p-value = 0.020), respectively. **Conclusion:** In this cohort, HbF and F cell levels remain important predictors of disease severity, as higher levels predicted reduced requirement for multiple blood transfusions in SCD patients, while HbF/F cells did not correlate with SCD clinical events.

Keywords: *sickle cellF cellfetal hemoglobin per F cellclinical parametersdisease severity.*

152. Haji, H.T., Ebrahim, A., Khamis, A.G., *et. al*… (2025). Associations of oral hypoglycemic use, fruit intake, and diabetes duration with gastrointestinal autonomic dysfunction in type 2 diabetes patients in Zanzibar. *Scientific Reports,* Vol. 15(1). Doi:10.1038/s41598-025-25627-8.

Abstract

Background: Gastrointestinal autonomic dysfunction (GAD) is a common complication of Type 2 Diabetes Mellitus (T2DM) leading to gastroparesis, constipation, and gastroesophageal reflux disease, consequently affecting the overall quality of life. However, its prevalence and risk factors remain underexplored, particularly in low-resource settings like Zanzibar. This study assessed the prevalence of GAD and its associations with pharmacological, clinical, and lifestyle factors among T2DM patients in Zanzibar using the Composite Autonomic Symptom Score (COMPASS 31)

questionnaire. **Methods: A** cross-sectional study was conducted among 364 T2DM patients attending clinics in Zanzibar. Participants were recruited from local healthcare facilities, and data were collected through structured interviews. The gastrointestinal subdomain of the COMPASS 31 questionnaire quantified symptoms of gastrointestinal dysfunction. Descriptive and inferential analyses were performed to explore prevalence and associated factors. **Results**: Among 364 participants, 140 (38.4%) had GAD. Longer diabetes duration was significantly associated with GAD, with those having diabetes for 7–9 years (adjusted OR: 2.19, $p = 0.050$) and > 10 years (adjusted OR: 2.04, $p = 0.036$) at higher risk. Use of oral hypoglycemic agents, more common in those with shorter disease duration, was linked to significantly lower odds of GAD (adjusted OR: 0.43, $p = 0.007$) compared to insulin alone. Additionally, consuming > 2 portions of fruit per day was associated with reduced risk (adjusted OR: 0.41, $p = 0.019$). Other factors, including gender and BMI, showed trends but were not statistically significant. **Conclusion**; GAD is common among T2DM patients in Zanzibar, with longer diabetes duration increasing risk, while oral hypoglycemic use and higher fruit intake are linked to lower risk. The protective association of oral hypoglycemics may reflect earlier disease stages, reinforcing the importance of early diagnosis and intervention. Findings highlight the need for integrated lifestyle and pharmacological approaches to mitigate autonomic complications. Future research, including longitudinal studies and clinical trials, should explore causal relationships, underlying mechanisms, and the impact of dietary modifications and pharmacological interventions on GAD.

Keywords: *Gastrointestinal autonomic dysfunction, Gastrointestinal autonomic neuropathy, Type 2 diabetes mellitus, Prevalence, Risk factors, Zanzibar.*

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153. Halim, N., Ghanekar, N., Mzilangwe, E.S., *et. al*… (2025). Can men's violence reporting behavior be improved? Evidence from a couples-based cluster randomized controlled trial in Tanzania. *Frontiers in Public Health*, Vol. 13. Doi:10.3389/fpubh.2025.1460333.

Abstract

Purpose: Intimate partner violence (IPV) is challenging to measure due to underreporting by both men and women. The reasons why men fail to disclose their IPV perpetration in societies where such behavior is more socially accepted remain an open question. Men's lack of awareness of how their behaviors can harm women is a contributing factor. We evaluated the impact of an intervention designed to increase men's understanding of IPV on their ability to report it accurately, as indicated by men reporting IPV consistently with their female partners (whose reports are valid indicators of IPV). **Methods**: We analyzed data from a cluster-randomized controlled trial conducted in Tanzania. A total of 450 couples from nine villages were randomly assigned to one of three arms, with each arm comprising 150 couples. In Intervention Arm 1, men participated in peer groups that explored gender relations and IPV. In Intervention Arm 2, men participated in peer groups, and communities additionally engaged in dialogues on similar topics. The Control Arm had no such activities. IPV data were collected from both partners, following ethical guidelines to ensure women's safety. Our primary outcome includes couples reporting concordantly whether IPV occurred (couples' concordant reporting). **Results**: From baseline to endline, concordant reporting among couples increased for physical (31%, $p = 0.002$), sexual

(24%, p = 0.01), and economic (22%, p = 0.05) IPV in Intervention Arm 1, accompanied by fewer men disagreeing with their female partners' IPV reports. Similarly, in Intervention Arm 2, concordant reporting increased for physical (24%, p = 0.02) and sexual (22%, p = 0.04) IPV. There was no improvement in the concordant reporting of emotional IPV across the arms. Compared to couples in the Control Arm, those in Intervention Arm 1 had higher odds of reporting concordantly on physical (OR: 1.85, 95% CI: 0.97, 3.51, p = 0.09) and economic (OR: 1.83, 95% CI: 0.96, 3.46, p = 0.09) IPV at endline compared to baseline**. Conclusion:** In communities that do not link IPV to fault, men may not report IPV because they do not recognize their behaviors as abuse. Including a preamble that defines IPV in a survey questionnaire can improve men's reporting of IPV.

154. Hamad, A.K., Machibya, F.M., Mlangwa, M.M., *et al*... (2025). Accuracy and reliability of Keynote for tracing and analyzing cephalometric radiographs. *The Angle Orthodontist,* Vol. 95(4). Doi: 10.2319/101724-864.1.

Abstract

Objectives: To evaluate the reliability and accuracy of Keynote for tracing and analyzing cephalograms in comparison to Quick Ceph Studio. **Materials and Methods:** This was a cross-sectional study, which utilized the lateral cephalometric digital images (radiographs) from 49 patients. The study site was the Dental Radiology unit in the School of Dentistry of the Muhimbili University of Health and Allied Sciences (MUHAS), in Dar es Salaam, Tanzania. Cephalograms were imported to Quick Ceph Studio and then to Keynote for analysis. Minimum, maximum, mean, standard deviation, and mean difference were used to describe the data. Agreement between the two techniques was assessed by the Bland-Altman plot, linear regression, and interexaminer reliability tests. A level of significance was considered at $P < .05$, and a 95% CI was estimated for the outcomes in the study groups. **Results:** The majority of the mean values obtained from Quick Ceph were greater ($P < .05$) than those obtained from Keynote. According to Bland-Altman plots, all measurements were within the limit of agreement except for only five linear variables. The interexaminer reliability test showed no agreement between the two instruments for all linear parameters except for the LAFH: TAFH, whereas all angular measurements revealed good to excellent agreement (ICC: 0.75 to 0.97) between the methods. **Conclusions:** The measurements obtained with the Keynote software were found to be clinically reliable since the limits did not exceed the maximum acceptable difference between the methods. The two software instruments were considered to agree and can be used interchangeably.

155. Hamad, A.K., Machibya, F.M., Mlangwa, M.M., *et al*... (2025). Cephalometric Characteristics of Various Ethnic Groups in Tanzania." *International Journal of Dentistry,* 2025.1. Doi:10.1155/ijod/6685596.

Abstract

Objective: This study aims to investigate the craniofacial skeletal profile features of the Tanzanian population with normal occlusion using lateral skull cephalograms, to determine the differences in craniofacial characteristics among various Tanzanian ethnic groups, and to compare the cephalometric norms of Caucasians with those of Tanzanians. **Materials and Methods:** Lateral

cephalograms were taken from 142 male and 167 female Tanzanians, aged 18–30 years, all with acceptable and pleasing profiles and Class I occlusion, and no history of previous orthodontic treatments. Six linear and 14 angular cephalometric measurements were selected for analysis. A Student t-test was used to compare the mean cephalometric values between Tanzanians and Caucasians, while a one-way analysis of variance was applied to assess the inter-ethnic differences within the Tanzanian group. **Results:** No significant differences were found between the Tanzanian ethnic groups, except for the ANB and NA-APog angles, which were increased in the Cushite group, and the Md1-ML angle, which was found to be reduced in the Bantu sample. Significant differences were observed between Tanzanians and Caucasians in all measurements (p<0:05) except for the Wits appraisal in sagittal relationships and the S-Go: N-Me and SN-OcP measurements in vertical relationships. **Conclusion:** The findings indicate that Tanzanian adults display distinct craniofacial characteristics, including a more convex facial profile, increased lower lip protrusion, dental proclination, and notable ethnic and intergroup variations.

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156. Hamad, A.K., Machibya, F.M., Mlangwa, M.M., *et al*… (2025). Tanzanian Population's Perspective on Facial Profile Esthetic Preferences. *International Journal of Dentistry*, 2025.1. Doi:10.1155/ijod/2937725.

Abstract

Background: The perception of facial profile attractiveness varies among individuals and may influence clinical decision-making in orthodontic dentofacial treatment goals. **Objective:** The study aimed to evaluate the facial profile preferences of Tanzanian individuals. **Materials and Methods:** This cross-sectional study was conducted at Muhimbili University Dental Clinic in Dar es Salaam, Tanzania. A total of 387 participants, including 146 females and 241 males, were selected based on their lack of technical awareness of the facial profiles. The mean age of the male and female participants was 27.94 ± 7.67 and 28.98 ± 7.76 years, respectively. The participants were asked to evaluate male and female facial profiles and score them on a scale of 1–4, with no score being assigned to more than one profile. The relative frequency of the profile scores was calculated, and a *t*-test and analysis of variance (ANOVA) were used to compare the preferences across different groups. A statistical significance was set at a 95% confidence interval (CI), with a *p*-value of $p < 0.05$ considered significant. **Results:** Among the male profiles, 48.3% (187) of the participants ranked profile M1, "normal maxilla, retruded mandible", as the most attractive, while 48.1% (186) ranked profile M2, "retruded maxilla, protruded mandible", as the least preferred. Statistically significant differences were observed between age groups and income groups ($p < 0.05$) in the ratings of each male profile. For the female profiles, 56.6% (219) of the raters preferred profile F4, "straight", while profile F3, "protruded maxilla, normal mandible", was ranked as the least preferred by 51.7% (200) of the participants. Significant differences were observed in the ratings of profile F4, "straight", between groups ($p < 0.05$), except when comparing ratings between genders, where no significant difference was found. No statistically significant differences in age or income were observed for profile F3, "protruded maxilla, normal mandible". **Conclusions:** The most preferred profiles among the Tanzanian population were the male profile with a mandibular retrusion (M1) and the female straight profile (F4).

157. Haonga, B.T., Njambilo, G., Mbocha, N., *et al.*.. (2025). The rate of conjunctival blood splash during intramedullary nailing: a hospital-based cross-sectional study. *East African Orthopaedic Journal*, Vol. *19*(1). Doi:10.4314/eaoj. v19i1.2.

Abstract

Background: In the healthcare setting, much focus is directed at preventing bloodborne illness transmission by needlestick, but, despite the well-documented risk of disease transmission across mucous membranes, precautions against blood splashes to the eye are often not practiced. The risk of blood splash to the eye is especially high in orthopaedic procedures where the use of power tools can cause aerosolization and high velocity spray of contaminated fluids. **Objective:** This study aimed to evaluate the risk of conjunctival contamination from blood and bodily fluid splash and the practice of using protective eyewear among theatre staff during intramedullary nailing for the treatment of long bone fractures at Muhimbili Orthopaedic Institute (MOI). **Methods:** A hospital-based cross-sectional study was carried out at Muhimbili Orthopaedic Institute (MOI) in Dar es Salaam, Tanzania to determine the rate of conjunctival contamination during intramedullary nailing procedures. Protective goggles were provided to surgical staff during intramedullary nailing procedures and, after surgery, inspected for macroscopic splashes. The questionnaire was used to collect information about utilization of protective eyewear by surgical staff. **Results:** Of the 491 goggles assessed, 92.46% were found to have evidence of macroscopic blood splash. The incidence of blood splashes during the operations was statistically significant ($p < 0.001$) at 89.06%- 94.11% C.I. of the 56 surgical staff included, 28.6% and 71.4% reported never or irregularly wearing protective eyewear, respectively. **Conclusion**: Nine in every ten goggles were found to have blood splashes and the use of eye protective devices was low and inconsistent among surgical staff. This carries with it, the risk for transmission of blood borne pathogen such as HIV and Hepatitis B and C.

158. Haule, J.B., Mahiti, G.R., Rabach, R.E. (2025). Factors Affecting Exclusive Breastfeeding Among Nursing Mothers in Tanzania: A Qualitative Study Evidence from Njombe Region, Southern Highlands of Tanzania. *Tanzania Journal of Health Research*, Vol. 26(4). Doi:10.4314/thrb. v26i4.12.

Abstract

Background: Exclusive breastfeeding (EBF) is critical for infant health yet remains below national and World Health Organization (WHO) targets/recommendations in Tanzania (64%, and 90% respectively). The Njombe region, despite a higher EBF prevalence (70%), exhibits high stunting rates (53.6%). This study explores factors influencing EBF practices among mothers in Njombe. **Methods:** The study employs a cross-sectional design, which is a qualitative approach. The study involved 5 focus group discussions with mothers (children 6-12 months), 7 Key informant interviews with healthcare providers, and 9 in-depth interviews with male/spouses of nursing mothers. Data collection of males occurred through random household visits. Credibility, dependability, transferability, and confirmability ensured research quality. Manual thematic analysis identified key themes and sub themes. Quotes were organised using Atlas ti 7 analysed by establishing themes, sub themes, and quotes to organize the results as well as to conclude the

subject matter. **Results:** Traditional medicine, misinterpreting infant cues, discarding of colostrum, and cultural norms emerged as significant influences on EBF practices. Participants reported the use of traditional remedies before six months, often associated with perceived hunger and growth. Beliefs about breast changes and cultural interpretations of crying influenced the early introduction of solid foods. Conversely, nutrition counselling during antenatal care (ANC) positively impacted EBF practices. Maternal perspectives highlighted the importance of professional support, with health facility accessibility and skilled lactation professionals influencing EBF rates. **Conclusion:** This study reveals the interplay of family dynamics, healthcare guidance, and cultural influences on EBF practices in Njombe. It emphasizes the need for multifaceted interventions that address cultural beliefs, enhance healthcare worker education on EBF support, and encourage active family involvement. By tackling these factors, we can foster long-term improvements in EBF practices, ultimately benefiting mothers and infants in the region.

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159. He, C., Zhu, Y., Bachwenkizi, J., *et al*… (2025). Assessment of heat wave impacts on child feeding practices across 36 low-income and middle-income countries: a cross-sectional analysis. *The Lancet Planetary Health,* Vol. 9(8).

Abstract

Background: Optimal feeding practices during the first 2 years of life are vital for child survival and growth. Current nutrition programmers in low- and middle-income countries focus primarily on long-term dietary improvement, overlooking the acute challenges that heat waves present to daily feeding practices in already nutritionally vulnerable populations. **Methods**: By using the Demographic and Health Surveys data, we analysed data from the youngest child aged 6–23 months (including both infants aged 6–11 months and young children aged 12–23 months) in 293 137 households across 36 low- and middle-income countries from 2000 to 2019. Our data came from mothers' 24-h dietary recall interviews about what foods they fed their youngest child on the previous day and night. Child feeding indicators included minimum dietary diversity (MDD), minimum meal frequency (MMF), and minimum acceptable diet (MAD), following WHO standards. Heat wave exposure was defined using location-specific temperature thresholds (92·5th, 95th, and 97·5th percentiles) with different duration criteria (≥2 or ≥3 consecutive days). Mixed-effects logistic regression models with distributed lag model frameworks were adopted to examine the cumulative effects of heat waves over 14 days, adjusting for potential confounders. **Findings:** Heat waves significantly disrupted feeding practices among children aged 6–23 months, with the strongest effects observed on the risk of not achieving MDD (odds ratio [OR] for not meeting MDD: 6·19 [95% CI 5·46–7·16] for 3-day heat waves at 95th percentile threshold). More severe heat waves additionally compromised the likelihood of achieving adequate meal frequency (OR for not meeting MMF: 2·78 [2·36–3·37] at 97·5th percentile), ultimately affecting children's ability to receive a minimum acceptable diet (OR for not meeting MAD: 4·66 [3·60–6·62]). These effects persisted up to 2 weeks post-exposure and showed strong negative impacts on consumption of nutrient-rich foods (OR 5·82 [4·44–7·65] for vegetables and vitamin A-rich fruits). Heightened vulnerability to inadequate feeding practices was observed in rural areas, low-income households, families with multiple young children, and those lacking cooling infrastructure (refrigerator or air conditioning), with ORs consistently higher than in their counterpart groups. Interpretation: Our

findings reveal that heat waves rapidly disrupt child feeding practices, and these disruptions continue for up to 2 weeks. This evidence calls for urgent integration of short-term heat adaptation strategies within existing long-term nutrition programmes, particularly for access to nutrient-rich foods. Improving access to basic cooling facilities, especially in vulnerable communities, is vital for safeguarding child nutrition as global temperatures rise.

160. He, C., Zhu, Y., Guo, Y., *et al*... (2025). Escalated heatwave mortality risk in sub-Saharan Africa under recent warming trend. *Science Advances*, Vol. *11*(48). Doi:10.1126/sciadv. ady7379.

Abstract

Evidence from high-income countries indicates populations are adapting to frequent heatwaves, but similar trends in resource-constrained regions remain unknown. We analyzed mortality data from 11 Health and Demographic Surveillance Systems across sub-Saharan Africa (2005 to 2015) to examine temporal changes in heat-related mortality risk. Contrary to global trends, our findings suggest that heat vulnerability is increasing across African populations. Nighttime heatwave mortality risk increased significantly between 2005 to 2010 and 2011 to 2015 [OR from 1.02 (95% CI: 0.87 to 1.13) to 1.18 (95% CI: 1.13 to 1.23)], while daytime heatwaves showed no significant impact. Compound heatwaves transformed from nonsignificant to significant risk factors [OR = 1.11 (95% CI: 1.03 to 1.22)]. Males showed increased risks across all heatwave types, females only for nighttime and compound heat. Children under 5 showed universal risk increases, while the elderly showed the highest increases for nighttime and compound heat. These findings suggest that physiological adaptation alone is insufficient to cope with increasingly frequent heatwaves without adequate socioeconomic resources. Heightened nighttime vulnerability underscores the need for context-specific adaptations reflecting Africa's distinct conditions.

161. He, L., Biskaduros, A., Clark, C, *et al*... (2025). Assessing Otolaryngology Capacity in Sub-Saharan Africa: Flexible Laryngoscope Availability and Use. *Journal of Voice*. Doi.org/10.1016/j.jvoice.2025.07.038.

Abstract

Objective: Flexible laryngoscopy is an essential tool for diagnosis within otolaryngology yet remains underutilized in many low-and-middle-income countries (LMICs), including those in Sub-Saharan Africa. This study aims to (1) characterize barriers to flexible laryngoscope access and use in Sub-Saharan Africa and (2) assess the perceived utility of the ZimScope, a low-cost, reusable flexible laryngoscope that was designed for such contexts. **Methods:** We conducted a mixed-methods study involving semi structured video interviews and structured surveys with 13 practicing otolaryngologists and one resident from eight Sub-Saharan African countries. Participants were recruited via snowball sampling. Video interviews were recorded, transcribed, and thematically analyzed. Surveys captured complementary data on equipment availability, procurement challenges, and desired flexible laryngoscope features. **Results:** Four central themes emerged: (1) equipment scarcity, (2) financial and procurement barriers, (3) disparities in patient access and practice capacity, and (4) laryngoscope design needs. Many respondents (85.7%) rated

their current laryngoscopes as expensive or very expensive, and 64.3% described access to scopes as a major or significant challenge. Public-sector providers reported greater shortages, with 76.9% citing current or past access issues. Additionally, 35.7% reported insufficient training in laryngoscopy, and 50% noted a lack of trained personnel to assist. Preferred device features included improved imaging, greater ergonomics, and portability. **Conclusion:** Persistent structural and logistical challenges hinder access to flexible laryngoscopes in Sub-Saharan Africa. Low-cost alternatives like the ZimScope shows promise as a cost-conscious solution, but broader efforts addressing procurement, training, and infrastructure will be key for equitable otolaryngology care delivery.

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162. Heaven light, E.M., Jovin, S.S., Celina, F.M., *et al*… (2025). Metastatic Cutaneous Malignant Melanoma to the Orbit: A Case Report. *Tanzania Medical Journal,* Vol. 36(3). Doi:10.4314/epnyjc19.

Abstract

Melanoma is a malignancy of melanocytes and can present anywhere in the body where there are melanocytic cells. Cutaneous melanoma is the third cutaneous cancer, but it is the most fatal. Cutaneous melanoma metastasizes widely; the commonest sites of metastasis are the lungs, skin, subcutaneous tissue, liver, brain, and bone. Rarely, metastasis can involve the orbit, and even more rarely, it can be the first presentation of widespread systemic metastasis. Orbital metastases from cutaneous melanoma typically occur at a late stage of the disease, where it carries a poor survival rate. We report a 68-year-old woman, who presented with a 3-month history of right eye protrusion accompanied by vision loss. She reports having a non-healing black swelling on her left big toe, for which she underwent amputation a year ago. The amputated toe was not taken for histopathology examination. On ocular examination, a brownish-pigmented protruding mass that appeared to originate from both superior and inferior conjunctival fornices, pushing the eyeball laterally, with tortuous feeder vessels and an opaque cornea, was seen. Hyperpigmented skin nodules on the left foot and an ulcer on the anteromedial aspect of the left leg were seen. A histopathology examination of the skin nodule revealed a cutaneous melanoma (Clarks level VI) with positive margins. The patient underwent orbital exenteration, and the biopsy was conclusive for a metastatic malignant melanoma of the orbit. Unfortunately, skin melanomas can mimic other benign skin lesions, making it easy to miss or delay diagnosis, which can lead to a poor survival outcome. The patient missed an opportunity for an early diagnosis of skin melanoma due to a lack of histopathological examination of the amputated toe, probably due to a low index of suspicion. To avoid delays in treatment, efforts should be made to do histopathology studies for every excised lesion, even in low-resource settings.

Keywords*: Orbital melanoma, Malignant cutaneous melanoma, Case report*.

163. Heavenlight, E.M., Frank, A.S., Celina, F.M., *et al*… (2025). Bilateral Gonococcal Conjunctivitis Amidst the Viral Keratoconjunctivitis Epidemic in Tanzania: A Case-Report. Tanzania *Medical Journal,* Vol. 36(3). Doi:10.4314/f42k4933.

Abstract

Gonococcal conjunctivitis is a potentially blinding infectious eye disease if not diagnosed and treated early. We report a case of 31-year-old female who presented with excessive purulent eye discharge and reduced vision for ten days. She had symptoms and signs of genital infection. Ulcerative keratitis was present in both eyes. Diagnosis of gonococcal keratoconjunctivitis was confirmed by gram stain and patient was given high-dose intravenous ceftriaxone injections. Right eye ulcerative keratitis progressed to corneal perforation and blindness. We report this case to remind clinicians to maintain high levels of suspicion when dealing with conjunctivitis, which does not respond to standard therapies.

Keywords: *Gonococcus, Conjunctivitis, Tanzania*

164. Holroyd, K.B., McDonough, A., Chomba, M., *et al*… (2025). Evaluation of a flipped classroom approach to undergraduate neurology medical education in Zambia. *Journal of the Neurological Sciences*, Vol. 475(123580). Doi: 10.1016/j.jns.2025.123580.

Abstract

Background: Countries in sub-Saharan Africa, including Zambia, have few neurologists, and neurophobia is common amongst medical trainees. While neurology teaching initiatives and training programs are growing in the region, innovative teaching methods are needed to improve neurology knowledge, reduce neurophobia, and encourage medical students to pursue careers in neurology. Furthermore, studies formally evaluating the effectiveness of different neurology teaching methods are needed. **Methods**: Fifth and seventh year undergraduate medical students on their internal medicine clinical clerkship were randomized by clerkship group (i.e. all students completing the clerkship in a given time period were randomized together) to either a traditional lecture or flipped classroom curriculum for delivery of the neurology content of their clerkship. In the traditional classroom arm, students attended in-person neurology lectures and accessed corresponding clinical case presentations online. In the flipped classroom arm, students watched pre-recorded neurology lectures, and class time was dedicated to interactive small group review of clinical cases. Students completed anonymous pre- and post-course surveys consisting of knowledge assessments, self-reported confidence in diagnosing/managing neurologic disorders, neurophobia surveys, and course satisfaction surveys. Pre-and post- course score differences and differences in change scores were compared between instructional models along with quantified effect sizes. **Results:** In total, 263 fifth year students (100 traditional, 163 flipped) and 99 seventh year students (48 traditional, 51 flipped) had complete data and were included in final analysis. A greater increase in knowledge assessment scores was observed in both the fifth and seventh year flipped classroom groups compared to the traditional groups ($p < 0.01$ for both). Both fifth- and seventh-year students in the flipped classroom groups also demonstrated a greater increase in confidence diagnosing and managing common neurologic conditions compared to students in the

traditional groups. Flipped classroom students in both year groups reported significantly greater course satisfaction, effective learning, course participation, and course collaboration. Neurophobia scores significantly decreased only in the fifth year flipped classroom group. **Conclusions**: A flipped classroom approach improved neurology knowledge, confidence diagnosing/managing neurologic disorders, and course satisfaction in Zambian medical students compared to traditional lectures. The flipped classroom approach may represent a promising pedagogical model for improving neurology education in similar resource-limited settings with few neurologists.

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165. Hontlelezi, J.A., Goymann, H., Berhane, Y., *et al*… *(*2025). The impact of the PEPFAR funding freeze on HIV deaths and infections: A mathematical modelling study of seven countries in sub-Saharan Africa. *eClinical Medicine*, Vol. 83(103233). Doi: 10.1016/j.eclinm.2025.103233.

Abstract

Background: On January 24, 2025, the United States government issued an executive order to freeze all foreign aid programs, including the President's Emergency Plan for AIDS Relief (PEPFAR), for 90 days. A limited waiver option became available, but its implementation remains incomplete. We estimated the impact of these policy changes on HIV deaths and new infections in seven sub-Saharan African (SSA) countries—Ethiopia, Kenya, Malawi, South Africa, Tanzania, Zambia, and Zimbabwe –which together account for about half of all people living with HIV in SSA**. Methods:** We used STDSIM, an established individual-based simulation model, and previously published quantifications for the seven countries. We predicted changes in HIV deaths and new infections over the period 2025–2030 for four scenarios: (1) Executive order—proportional, where treatment disruption was proportional to the country-specific PEPFAR's share of total HIV funding; (2) Executive order—realistic, assuming near-total system collapse due to program dependencies; and (3–4) Waiver scenarios where treatment was resumed after 4 or after 8 weeks. Resumptions of programs accounted for delays due to organizational and logistical challenges. **Findings:** A 90-day funding freeze would result in 60 thousand [95% UI: 49–71 thousand] excess HIV deaths for the Executive order—proportional scenario. This number would increase to 74 thousand excess HIV deaths [95% UI: 63–89 thousand] for the Executive order—realistic scenario. Under a 4-week and 8-week waiver scenario, projected excess HIV deaths ranged between 21 thousand [95% UI: 15–28 thousand] and 28 thousand [95% UI: 22–36 thousand], respectively. Excess new infections ranged between 35 and 103 thousand for the different scenarios. **Interpretation:** The sudden cessation of PEPFAR funding likely results in tens of thousands of HIV deaths and new infections. These losses of life and health should compel the United States government to rapidly and fully re-instate one of the most successful health programs in history.

166. Hyuha, G., Kilonzi, M., Sirili, N., *et al*… (2025). Access to emergency care in primary healthcare system in Tanzania: a mixed-method community-based study in a resource-limited setting. *BMJ Public Health*, Vol. 3(2). Doi:10.1136/bmjph-2025-003812.

Abstract

Introduction: Timely access to emergency care services (ECS) is vital for reducing morbidity and mortality from acute conditions. While global barriers to ECS are well documented, little attention has been paid to access within primary healthcare (PHC) in low- and middle-income countries. This study assessed access to ECS at PHC in Tanzania, offering insights relevant to similar contexts. **Methods:** We conducted a community-based, mixed-methods study in December 2021 across four villages in three Tanzanian regions. A structured questionnaire based on WHO-ECS indicators was administered to 673 randomly selected community members, covering healthcare access, awareness and barriers. Additionally, 12 in-depth interviews were conducted with village leaders and healthcare providers, and 4 focus group discussions with village health committee members explored systemic issues. Quantitative data were summarized using descriptive statistics, while qualitative data were analysed thematically. The primary outcome was the proportion accessing ECS, assessed across availability, acceptability, physical accessibility and affordability. Secondary outcomes included general healthcare access and perceived challenges, analysed using both quantitative and qualitative methods. **Results:** Among 673 participants, median age was 43 years (IQR 31–55); 55% were female, 68% had primary education and 89% were self-employed, mostly subsistence farmers. While 91% sought healthcare, only 27% sought ECS; of those, 73% obtained it. Most found ECS available (79%), affordable (64%), acceptable (59%) and accessible (57%). Barriers included long travel distances (48%), long waiting times (74%), medication shortages (64%), poor customer service (56%) and inability to pay (56%). Qualitative data revealed systemic issues such as poor infrastructure, low trust in facilities and preference for traditional healers. **Conclusion:** Our findings underscore significant barriers to access to ECS at the PHC level. These barriers are systemic, infrastructural and sociocultural. Addressing them requires coordinated, multisectoral interventions involving policy makers, healthcare providers, decision-makers at national and local levels, and communities.

167. Hyuha, G., Nyamle, N., Kilonzi, M., *et al*… (2025). From injury to outcome: A mixed-methods study of animal-related injuries in a rural district of Tanzania. *PLOS Neglected Tropical Diseases,* Vol. 19(9). Doi: 10.1371/journal.pntd.0013494.

Abstract

Background: Animal-related injuries remain a neglected public health issue in rural Tanzania, exacerbated by limited access to care and varied occupational exposures. While some studies have examined bite management in tertiary hospitals, little is known about the situation at the primary healthcare (PHC) level. This study explored clinical presentations, management and outcomes of animal-related injuries in a rural Tanzanian setting, using Mkinga District as a case study. **Methods:** A mixed-methods study was conducted in February 2024 across 29 PHC facilities in Mkinga, Tanzania. The quantitative component involved a retrospective audit of animal-related injury records from 2019 to 2023. The qualitative component comprised 10 interviews with facility

in-charges to explore clinical decision-making, treatment approaches, and outcomes. Quantitative data were analyzed using SPSS; thematic analysis was applied to the qualitative transcript. **Results:** A total of 351 cases were documented. Symptom data were missing in over 70% of records, limiting clinical profiling. Among recorded cases, corticosteroids (55%) and antihistamines (53%) were commonly used, especially for insect and dog bites. Antibiotics were administered in insect stings (26%) and dog bites (23%), and analgesics were frequently used for insect bites. Antidotes were most common in dog (58%) and snake bites (26%). Of two cat bite cases, only one received antibiotics; neither received tetanus toxoid, despite the known infection risk. Qualitative findings highlighted three themes: clinical presentations, treatment modalities, and outcomes. Respondents described primary (e.g., bleeding, pain) and systemic (e.g., respiratory distress, neurological signs) symptoms. Treatment involved a mix of pharmacological, non-pharmacological, and traditional methods. While most patients recovered, some experienced complications or death. **Conclusion:** PHC facilities manage most animal-related injuries effectively, but gaps in documentation, guideline adherence, and referral systems remain. Strengthening provider training, improving resources, and engaging traditional healers may enhance timely care. Broader surveillance and community education are critical to reducing preventable harm.

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168. Ibrahim, P. M., Haddadi, S., Luhuti, K., *et al*... (2025). Dilemmas in diagnosing advanced HIV disease: a case report of repeatedly false negative rapid HIV tests in a patient with epidemic Kaposi sarcoma in Tanzania. *Critical Public Health*, Vol. 35(1). Doi:10.1080/09581596.2025.249912.

Abstract

Background: Despite global efforts to control Human Immunodeficiency Virus (HIV), a significant number of individuals present for care with advanced HIV disease. A false negative HIV test, where HIV-infected individuals receive negative test results, delays treatment initiation and increases transmission risks. We report a clinical case and outcome of a patient with advanced HIV infection who presented with repeated false-negative rapid HIV tests. A 37-year-old Tanzanian woman presented at Muhimbili National Hospital (MNH) with respiratory symptoms, weight loss, and multiple purplish skin lesions suspicious of Kaposi sarcoma. Despite numerous negative rapid HIV test results at different healthcare and research facilities, she tested positive for HIV using Enzyme-Linked Immunosorbent Assay (ELISA) with a viral load of 747,000 copies/mL. A skin biopsy confirmed Kaposi sarcoma. She started on antiretroviral therapy (ART); however, she faced financial barriers to starting chemotherapy, her condition worsened, and she died. This case report shows that the HIV testing algorithm using rapid tests alone may lead to the misdiagnosis of critical HIV cases. It indicates a potential need for additional screening criteria for those testing negative. We recommend that global and national HIV guidelines incorporate pathways that account for false negative results in resource-limited countries to reduce advanced HIV disease incidence, mortality, and HIV transmission.

169. Ibrahim, P., Kabakama, C., Wilfred, V., *et al*… (2025). Complete heart block with SARS-COV-2 infection inducing permanent pacing: a case report from a tertiary private hospital in Tanzania. *Oxford Medical Case Reports*, Vol. 2025(1). Doi:10.1093/omcr/omae167.

Abstract

Background: There is an increased risk of cardiac complications in COVID-19 among patients with pre-existing comorbidities due to their existing pro-inflammatory status. The manifestation of complete heart block has been evidenced as transient and in no need of intervention. This case presents a previously healthy woman who was diagnosed with SARS-CoV-2 infection and complete heart block; she underwent permanent dual-chamber pacemaker implantation after successful treatment and a negative COVID-19 test. She was then discharged from the hospital with an uneventful follow-up. Persistence of complete heart block symptoms post-COVID-19 resolution and the need for permanent pacing indicate a potential association between COVID-19 and complete heart block. Healthcare workers should consider electrographic examination in the initial assessment of suspected COVID-19 cases, even among those with no pre-existing conditions. This report highlights the need for further research to explore the relationship between COVID-19 and complete heart block.

170. Igunza, K.A., Westbrook, A.L., Owuor, H., *et. al*… (2025). Advancing approaches to identify young children at risk for post-discharge mortality: Protocol for a prospective observational cohort study in Western Kenya. *BMJ Paediatrics Open*, Vol. 9(1). Doi:10. 1136/bmjpo- 2025- 004176.

Abstract

Introduction: Childhood mortality rates following hospital discharge may outpace inpatient mortality rates in some sub-Saharan African settings. Broadly validated risk assessment tools and biomarkers to identify children at risk for post-discharge mortality (PDM) are lacking. Moreover, clinical diagnoses (eg, pneumonia, sepsis, etc.) that confer high risk of PDM share a common pathobiology that culminates in endothelial dysfunction. The objectives of this study are to (1) externally validate existing risk assessment tools for PDM at 60 days and (2) test the association between a marker of endothelial dysfunction (ie, the global arginine bioavailability ratio [GABR]) and 60-day PDM among young children. **Methods and analysis:** This is a prospective, observational cohort study of neonates (aged 0–28 days, n=1000) and infants and children (aged 1–59 months, n=1000) consecutively discharged from two hospitals in Western Kenya (ie, Jaramogi Oginga Odinga Teaching and Referral Hospital [JOOTRH] and Siaya County Referral Hospital). Candidate variables for previously developed risk assessment tools identified through a systematic review and plasma samples will be collected on the day of hospital discharge. Caregivers of participants will receive telephone calls 30 days and 60 days following discharge to ascertain participants' vital status. Test characteristics and area under the receiver operating characteristic curves will be calculated for each risk tool to determine their discriminatory value. Risk predictiveness and calibration of each tool will also be determined. Mean and median levels of

GABR will be compared between cases and matched controls, and conditional logistic regression will be used to test the association between GABR and PDM. **Ethics and dissemination**: This protocol has received clearance from the Kenya Medical Research Institute Scientific Ethics Review Unit, the JOOTRH Ethics Research Committee, and the Emory University institutional review board. Our results will be disseminated through scientific presentations at national and international conferences and peer-reviewed publications.

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171. Ikwuegbuenyi, C.A., Zeoli, T., Waterkeyn, F., *et al*... (2025). Patients with traumatic spinal injuries treated in a low-and middle-income country: what happens after discharge? *Neurosurgical Focus*, Vol. 58(3). Doi:10.3171/2024.12. focus24826

Abstract.

Objective: Traumatic spinal injuries (TSIs) represent significant global health challenges, particularly in low- and middle-income countries (LMICs). In a cohort of patients with TSI from a major East African center, the authors sought to address long-term outcomes after hospital discharge through the following objectives: 1) describe who was successfully contacted after hospital discharge, 2) report posthospital complications, and 3) assess predictors of successful posthospital contact and posthospital complications. **Methods:** An institutional TSI registry of patients treated from 2016 to 2021 was the source of patients and contact methods. Telephone calls were made to the primary telephone number between June 2022 and May 2023, and a subjective neurological assessment was performed using a questionnaire. The study outcomes were successful posthospital contact and postdischarge complications. Predictors of each outcome were assessed through univariable and multivariable logistic regression. **Results:** Of the 466 TSI patients treated from 2016 to 2021, 40.6% were successfully contacted at a median follow-up period of 29 months. Their median age was 34 years, and most patients were male (n = 400, 85.8%). Among those contacted, 84.8% experienced postdischarge complications, including muscle spasticity (n = 89, 61.4%), pressure ulcers (n = 52, 35.9%), and death (n = 39, 21.2%). Most patients reported a perceived improvement in their neurological status. Key factors predicting successful contact included undergoing surgery, involvement in road traffic accidents, and more recent hospital admission dates following TSI (2019–2021). Employment postinjury was associated with fewer complications (OR 0.20, 95% CI 0.04–0.76; p = 0.029). American Spinal Injury Association Impairment Scale (AIS) grade A at discharge was associated with a significantly increased mortality risk compared with AIS grades B–E (OR 15.58, 95% CI 5.80–50.46; p < 0.001). **Conclusions:** This is one of few studies to report on posthospital follow-up using telephone contact for TSI in an LMIC. Among the contactable patients, there were high rates of morbidity and mortality and low rates of employment, showing the considerable medical, social, and economic impact of TSI in this young population and the need for rehabilitation and support services post discharge.

***Keywords**: traumatic spinal cord injury; spine trauma; LMICs; Tanzania.*

172. Illonga, Z., Haddadi, S., Luhuti, K., *et. al*… (2025). Barriers to Breast Cancer Diagnosis in Tanzania: Patient Perspectives and Recommendations for Improvement. *Cancer Epidemiology, Biomarkers & Prevention*, Vol. 34(12). Doi: 10.1158/1538-7755.ASGCR25-

Abstract

Purpose: Timely diagnosis is one of the core pillars of the World Health Organization's Global Breast Cancer Initiative. This study explored the experiences of Tanzanian women in securing a breast cancer diagnosis and gathered their recommendations for enhancing the diagnostic process in a resource- constrained setting. **Methods:** We conducted a qualitative study involving 14 women who completed breast cancer treatment at Ocean Road Cancer Institute in Dar es Salaam, Tanzania. Purposive sampling was used to recruit the participants to ensure cancer survivors who are active as patient advocates were also represented. Data were collected through in-depth, semi-structured interviews. Interview prompts focused on the participant's experiences related to obtaining a breast cancer diagnosis. Data were analyzed using the Model of Pathways to Treatment framework alongside a rapid analysis approach to identify healthcare system strengths, barriers to diagnosis, and suggestions for improvement. **Results:** Participants had a median age of 50 years (range 40–60 years). All participants were cancer survivors, with 71% (10/14) being active patient advocates. Identified strengths within the health system included the availability of primary care and specialized cancer care services, some health insurance coverage, and social welfare support from various healthcare facilities. Barriers to timely diagnosis included financial and logistical constraints, insufficient resources in healthcare facilities and limited breast cancer knowledge among non-specialized healthcare providers. Participants also reported challenges in navigating the health system, complicated referral pathways, delays in receiving biopsy results and poor patient-provider communication. Recommendations for improvement included enhancing patient-provider communication, improving training for primary care providers, reducing costs for diagnosis, strengthening pathology services, and incorporating psychological support in breast cancer care. **Conclusion:** This study highlights the strengths and weaknesses of Tanzania's healthcare system for breast cancer diagnosis. By preserving the strengths while addressing existing challenges, access to breast cancer diagnostics could be improved. Initiatives aimed at improving breast cancer care should prioritize the implementation of patient suggestions, such as enhancing patient-provider communication and strengthening pathology services including lowering diagnostic costs.

173. Irzal, M.A.S.M., Wahyono, T.Y.M., Insani, P.N. C., *et al*... (2025). Association Between Body Mass Index and Mortality in Patients with Tuberculosis-HIV Co-Infection in Asia and Africa: A Systematic Review and Meta-Analysis Protocol. *Al-Sihah: The Public Health Science Journal*, 23-32. Doi:10.24252/al-sihah. v17i1.56107.

Abstract

Globally, the prevalence of tuberculosis (TB) and human immunodeficiency virus (HIV) co-infection in 2019 was 8.2%. In 2020, TB-related deaths among individuals with HIV totaled 214,000, representing an increase from the previous year. Previous studies suggest that body mass index (BMI) is a significant predictor of mortality risk in individuals with TB and HIV co-

infection, as malnutrition and low BMI are frequently linked to poorer clinical outcomes. This protocol has been developed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) guidelines. A systematic review and meta-analysis will be conducted by searching three databases: MEDLINE/PubMed, Scopus, and ProQuest. This protocol aims to outline the stages and procedures of the forthcoming systematic review and meta-analysis, including the justification of the research question; the definition of Population, Exposure, Outcome, and Study design (PEOS); the inclusion and exclusion criteria; the search strategy; study screening and data extraction; and the planned data analysis. Identifying BMI as a prognostic factor through this study may inform nutrition-based interventions and treatment protocols aimed at reducing mortality among individuals co-infected with TB and HIV in Asia and Africa.

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174. Iseselo, M.K., Lukumay, G.G., Mosha, I.H. (2025). Psychosocial Challenges and Coping Strategies Among Adults Living with HIV in Ubungo Municipality, Tanzania: A Qualitative Descriptive Study. *The East African Health Research Journal*, Vol. 8(3). Doi: 10.24248/eahrj. v8i3.812.

Abstract

Background: People living with HIV (PLWH) face numerous psychosocial challenges within the context of healthcare systems and the community where they live. This study aimed to describe psychosocial challenges and individual coping strategies among adults attending Care and Treatment Clinics (CTCs) in Ubungo Municipality, Tanzania. **Materials and Methods:** A qualitative descriptive study was conducted at CTCs in Ubungo Municipality, an urban setting in Dar es Salaam. Data were collected through audio-recorded in-depth interviews with 10 purposively selected participants. Audio files were transcribed verbatim and analyzed using a thematic analysis approach. **Results:** Difficulty in accepting HIV-positive test results, feeling desperate, fears of HIV disclosure, HIV-related stigma, and financial instability related to HIV infection were the main psychosocial challenges described by the participants. However, their main coping strategies included seeking social support, positive experiences from regular CTC attendance, adaptive coping, disregarding people's comments, and seeking HIV-related information. **Conclusion:** PLWH encounter various psychosocial challenges. Feeling desperate, fear of HIV disclosure, and HIV-related stigma are the main causes of psychosocial distress among people diagnosed with HIV. Changing the individual perspectives on these challenges through effective coping strategies can improve the quality of life for PLWH. The Ministry of Health, through the National AIDS Control Program, can design interventions focused on addressing these challenges. Future research should be undertaken to quantify the magnitude of these challenges and the coping strategies in similar settings.

175. Ishungisa, A. M., Kilgallen, J. A., Mabula, E., *et al*… (2025). Prestige and gender role ideology: a study of young Tanzanian men. *Evolutionary Human Science,* Vol.7. Doi:10.1017/ehs.2025.4.

Abstract

To inform theoretical accounts of social learning and gendered conflict, we explore the role of prestige in the formation of men's beliefs about gender in a semi-rural but fast urbanizing community in north-western Tanzania. Using focus groups and participant observation, we contrast the extent to which young men view elders and men from the neighbouring city as prestigious, and the beliefs they ascribe to each category. Elders were viewed as prestigious because of their age and position as preservers and teachers of societal norms. Their prestige was culturally mandated, as evidenced by customs bestowing respect. In contrast, only subcategories of city men were deemed prestigious, dependent on individual achievement. Prestige was difficult to distinguish from dominance, as both elders and city men can exert penalties on those with differing views. Elders were viewed as mostly, but not always, unsupportive of women's empowerment, whereas city men were viewed as mostly, but not always, supportive of women's empowerment. We conclude that urbanization shifts the distribution of prestige, exposing individuals to novel sources of social influence. However, future studies should be wary not to oversimplify elders as upholders of patriarchal beliefs and city men as universally supportive of women's empowerment.
Keywords: *cultural evolution gender social learning strategies gendered conflict global health.*

176. Itaeli, A.M., Joseph, P.E., Sunguya, B.F., *et al*… (2025). Rate of Bacterial Positivity Following Antibiotic Initiation: A Systematic Review and Meta-analysis. *Systematic Reviews,* Vol. 15(25). Doi:10.1186/s13643-025-03032-6.

Abstract

Background: Bacterial culture remains a critical tool for pathogen identification and antimicrobial susceptibility testing. However, its diagnostic accuracy is often compromised by prior antibiotic administration, which can reduce the recovery of viable organisms and lead to false-negative results. Given the variability and limitations in the existing studies, a systematic review is needed to better understand the influence of antibiotics on culture yield. **Methods:** We conducted an electronic search in PubMed, Embase, Scopus and Web of Science from their inception through March 2025. The Newcastle–Ottawa Scale was used to assess the methodological quality of the included articles. Random effects models were used to estimate the proportions and 95% Confidence Intervals (CIs). The protocol for this review was registered in PROSPERO: CRD42025648397. **Results:** Of the 1226 articles obtained from the search, 11 were eligible. The eligible articles comprised 67,330 samples with culture results after antibiotic administration. The pooled proportion for bacterial growth was 37% (95% CI 20–56%) and 18% (95% CI 10–29%) before and after antibiotic administration, respectively. Significant heterogeneity ($I2 = 99.8\%$, p-value < 0.001) was observed across the included studies. **Conclusion:** Bacterial growth decreased by more than half following antibiotic administration, indicating a strong suppressive effect. This highlights the importance of considering the timing of sample collection in relation to antibiotic initiation. Where necessary, particularly in cases of uncertain clinical progress, sampling after

antibiotic administration can be useful for monitoring prognosis and guiding further treatment decisions.

177. Jackline, E.N., Mageda, K., Pius, K., *et al*… (2025). Leveraging Primary Healthcare to Address the Double Burden of Disease and Advance Universal Health Coverage: Lessons from Tanzania's First International Primary Healthcare Conference. *PAMJ*, Vol. 52(5). Doi: 10.11604/pamj.supp.2025.52.1.50703.

Abstract

Introduction: In March 2024, Tanzania, through the Ministry of the President's Office, Regional Administrative and Local Governance (PORALG), hosted the first International Primary Healthcare Conference (IPHC). The conference convened researchers, policymakers, implementers, and practitioners to discuss health challenges and interventions in the context of primary healthcare (PHC) in Tanzania. This paper summarizes key lessons from the conference on how Tanzania is leveraging PHC to address the double burden of disease and advance universal health coverage (UHC). **Methods:** A desk review of conference documents, including submitted abstracts, conference proceedings, and videos, was undertaken. Descriptive content analysis was utilized to generate categories from all relevant documents presented under the Communicable and Non-communicable Disease (NCDs) subthemes, focusing on themes, presentations, and discussions. **Results:** Findings from the analysis were grouped into six categories: (1) data-driven decision-making in PHC, (2) challenges and opportunities in PHC funding for service integration, (3) barriers to integrating NCD services into vertical programs, (4) the role of Community Health Workers (CHWs) in supporting the continuum of care, (5) capacity building for health system performance, and (6) political will as a driver of health interventions. **Conclusion:** Data utilization enables targeted interventions that address community needs, while local funding is vital for consistent service delivery. Effective integration of chronic care, supported by empowered CHWs, is essential to strengthen PHC in Tanzania. Strong political commitment and capacity building promote high-quality service and improved health outcomes. Collaboration among stakeholders remains critical to strengthening PHC and achieving universal health coverage (UHC).

Keywords: *Primary healthcare, integration of health services, non-communicable diseases, communicable diseases, Tanzania, universal health coverage*

178. Jackson, A., Chibwae, A., Bakari, R., *et al*... (2025). Superior mesenteric artery syndrome: a rare pediatric syndrome with limited surgical options in LMICs—a case report from Muhimbili National Hospital. *Journal of Rare Diseases*, Vol. *4*(1). Doi:10.1007/s44162-025-00095-w.

Abstract

Superior mesenteric artery (SMA) syndrome is an uncommon condition that can lead to significant mortality and morbidity due to small bowel obstruction, especially in infants. There is a lack of specific management guidelines with limited surgical options in LMICs. The index case shows that

a gastrojejunostomy procedure with Braun anastomosis can provide an adequate desired outcome in the management of SMA syndrome in low-resourced settings.

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179. Jackson, E.M., Kamori, D., Mwandigha, A.M., *et al*… (2025). Fecal carriage and associated factors of extended-spectrum beta-lactamase-producing Enterobacteriaceae in children under five years old with diarrhea at a tertiary hospital in Tanzania. *Plos one*, Vol. 20(10). Doi: 10.1371/journal.pone.0334051.

Abstract

Background: The prevalence of extended-spectrum beta-lactamase-producing Enterobacteriales (ESBL-PE) is high in resource-limited settings. Carriage in young children has been linked to increased morbidity and mortality. However, there is limited information on the prevalence of ESBL-PE among children under five in our settings. This study aimed to determine the fecal carriage of ESBL-PE in children under five years old suffering from diarrhea at a tertiary hospital in Tanzania. **Methodology:** This cross-sectional study was conducted over a three-month period at Muhimbili National Hospital in Dar es Salaam, Tanzania. Participants' socio-demographic and clinical information were collected using a structured questionnaire and the child's clinic card. Stool samples were collected and screened for the presence of ESBL-PE using MacConkey agar supplemented with ceftazidime. Confirmation of ESBL-PE was achieved through a double disk synergy test. Logistic regression analysis was employed to identify factors independently associated with ESBL-PE carriage. A p-value of less than 0.05 was considered statistically significant. **Results:** We enrolled 181 children with a median age of 29 months (interquartile range: 20–37). The female-to-male ratio was 1:1. Among all participants, 54.1% (98/181) were malnourished, and the parents of 54.1% (98/181) had low levels of education. The overall fecal carriage rate of ESBL-PE was 65.7% (119/181). A total of 120 ESBL-PE isolates were confirmed. E. coli was the predominant ESBL-PE, contributing to (74.2%, 89/120), followed by K. pneumoniae (21/120, 17.5%), K. oxytoca (8/120, 6.7%), and Citrobacter spp. (2/120, 1.7%). Malnourished children had a higher carriage rate of ESBL-PE (77.6%) compared to non-malnourished children (51.8%) ($p = 0.0003$). Prolonged hospital stays (aOR=1.12, 95% CI = 1.05–1.19, $p = 0.001$), malnourishment (aOR=3.15, 95% CI = 1.61–6.19, $p = 0.001$), and a history of antibiotic use (aOR=2.28, 95% CI = 1.15–4.54, $p = 0.018$) were independently associated with the carriage of ESBL-PE. Furthermore, we observed that ESBL-producing E. coli isolated from malnourished children had high resistance rates of 75% and 65% against aztreonam and sulfamethoxazole/trimethoprim, respectively, while ESBL-producing K. pneumoniae isolated from the same group exhibited high resistance rates of 84.6% and 69.2%. **Conclusion:** The present study revealed that children under five years old with diarrhea have a higher rate of ESBL-PE fecal carriage. Furthermore, prolonged hospital stays, malnutrition, and a history of antibiotic use are independently associated with ESBL-PE carriage. We also report high resistance rates of ESBL-PE isolated from malnourished children. These findings emphasize the importance of enhancing infection prevention and control measures to mitigate the spread of multidrug-resistant pathogens in both hospital and community settings.

180. James, E.M., Kimera, Z.I., Mgaya F.X., *et al*… *(*2025). Occurrence of virulence genes in multidrug-resistant *Escherichia coli* isolates from humans, animals, and the environment: One health perspective, *Plos One*, Vol. 20(1). Doi: 10.1371/journal.pone.0317874.

Abstract

Escherichia coli is one of the critical One Health pathogens due to its vast array of virulence and antimicrobial resistance genes. This study used multiplex PCR to determine the occurrence of virulence genes *bfp*, *ompA*, *traT*, *eaeA*, and *stx1* among 50 multidrug-resistant (MDR) *E. coli* isolates from humans (n = 15), animals (n = 29), and the environment (n = 6) in Dar es Salaam, Tanzania. Their association with antimicrobial-resistant genes (ARGs) was determined using Principal Component Analysis (PCA). All 50/50 (100%) MDR *E. coli* isolates carried at least one virulence gene, with 19/50 (38%) carrying four genes, *bfp* + *traT* + *eaeA* + *ompA*. The findings showed a high occurrence of virulence genes *bfp* (82%), *traT* (82%), *eaeA* (78%), and *ompA* (72%); the study detected no *stx1* in any of the isolates. In humans, the most detected virulence genes were *bfp* and *traT* 14/15 (93.3%); for poultry, it was *eaeA* 13/14 (92.9%); for pigs, was *bfp* and *traT* 13/15 (86.7%); while for river water, it was *eaeA* 6/6 (100%). The study observed no significant association between virulence genes and ARGs. PCA results show the genes *ompA*, *traT*, *eaeA*, and *bfp* contributed to the virulence of the isolates, and *blaTEM*, *blaCTX-M*, and *qnrs* contributed to ARGs. The PCA ellipses show that isolates from pigs had more virulence genes than those isolated from poultry, river water, and humans. The high frequency of numerous virulence genes in MDR *E. coli* isolates from humans, animals, and the environment indicates that these isolates have a very high potential to cause diseases that are difficult to treat because they are MDR.

181. James, T.K., Victoria, O.L., Nyasiro, S.G., *et al*… (2025). Building a Responsive and Resilient Health System in Tanzania: Exploring Recommendations from Literature and the First International Primary Health Care (iPHC) Conference. *Research Gate,* Vol. 52 (1). Doi: 10.11604/pamj.supp.2025.52.1.46896.

Abstract

Introduction: There is growing evidence that universal health coverage (UHC) can be achieved by investing in primary health care (PHC). Attempts to understand the evidence that provides recommendations for health system strengthening are scarce. This study aimed to compile recommendations for health system strengthening in Tanzania. **Methods:** This study adopted a descriptive qualitative study design to gather and analyze data. An extraction form was used to gather information from abstracts and conference proceedings from, international primary health care (iPHC) conference held in Dodoma, Tanzania from 25th -27th March 2024 and scholarly articles and global reports from January 2013 to December 2023 that focus on the functionality of Primary Health Care (PHC) in Tanzania. Thematic analysis was employed in data analysis of the gathered information. **Results:** The recommendations obtained from both the literature and iPHC conference pointed out the need for: 1) Embracing learning health system culture; 2) Investment in continuous professional development. 3) Capital investment for health system inputs; 4)

Intensifying knowledge and uptake of prepayment programmes and other sources of health care financing; 5) Investing in quality improvement; and 6) addressing issues beyond the health system. **Conclusion:** Health system strengthening efforts in Tanzania towards UHC, requires a multifaceted approach. Strategies geared towards improvement of supply side bottlenecks coupled with intervention in the demand side are required. Moreover, the role of political commitments and intersectoral collaboration for tackling issues beyond the health system and emerging global health challenges such as emerging and re-emerging diseases, climate change is critical.

Keywords: *Resilient, responsiveness, health system, primary health care, universal health coverage.*

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182. Janson, S., Mayo-Wilson, L. J., Knox, J., *et al*... (2025). Perceptions of the Combining HIV Services and Microenterprise for Sustainable Recovery (CHIMES) Intervention for Sober House Residents in Tanzania: A Qualitative Study. *Drug and Alcohol Dependence*, Vol. 267. Doi: 10.1016/j.drugalcdep.2024.111748.

Abstract

Background: Peptic ulcer is one of the gastrointestinal (GI) diseases presenting with dyspeptic symptoms, and its causes often overlap, making etiological diagnosis difficult. Endoscopy remains the ideal for identifying organic disease of the foregut. Helicobacter pylori (H. pylori) infection has commonly been associated with most upper gastrointestinal pathologies. Broad **Objective:** This scholarly cross-sectional study was conducted to determine the association between H. pylori infection and peptic ulcer disease in 116 dyspeptic patients who visited the Gastroenterology Unit at Muhimbili National Hospital (MNH)in Dar es Salaam, located on the eastern coast of Tanzania. The study aimed at obtaining data that could be used as a benchmark for future H. pylori screening as a preventive measure to control peptic ulcer disease (PUD) in Tanzania. Methods: The study included all patients with dyspeptic symptoms visiting and/or referred to the Gastroenterology Unit from 1st to 30th August 2015. Dyspepsia was defined as persistent or recurrent pain or discomfort in the upper abdomen. Patients diagnosed with PUD within the observation period were verified through medical records. Information on psychosocial factors, medication, and symptoms was obtained from a questionnaire completed at study entry. In this study, H. pylori infection status was determined serologically. **Results:** The most commonly identified endoscopic findings were gastritis, which accounted for 44 (37.9%) patients, gastroesophageal disease accounting for 35 (30.2%) patients, and peptic ulcer disease in 30 (25.9%) patients. Among patients with peptic ulcer disease, 17 (56.7%) had H. pylori infections. The association between peptic ulcer disease and H. pylori infection was statistically significant (p-value < 0.001). Neither gastritis nor gastroesophageal reflux disease (GERD)was found to be associated with H. pylori infection. **Conclusion:** There is a statistically significant association between H. pylori and PUD (gastric and duodenal ulcers), a signature to previous reports out of our settings. Our study benchmarks the need for further studies focusing on screening, for early diagnosis, and predictions to establish the existing relationships and possible cofounders in these proposed relationships. The increasing number of reported PUD at MNH and the presence of H.

pylori infection warrant studies targeting to investigate the co-existence of these two closely linked GIT conditions for future effective interventions.

183. Janson, S., Mushy, S.E., McPherson, M., *et al*... (2025). Exploring perceptions of the services offered in Tanzanian sober houses: a mixed-methods study among service users and providers. *BMC Health Services Research*, Vol. 25(1). Doi. 10.1080/14659891.2023.2194437.

Abstract

Background: In Tanzania, residential treatment centers for alcohol and other drugs, locally known as "sober houses," play a critical role in the treatment of people living with a substance use disorder (SUD), but little is known about the services they offer and service users' and providers' perceptions of those services. We aimed to address these gaps in knowledge and to better understand where evidence-based interventions may be able to address gaps in service provision. **Materials and methods:** This study used a mixed-methods approach across four sober houses in Dar es Salaam, Tanzania. We conducted 48 semi-structured interviews with a sub-sample of sober house service users (n = 38) and service providers (n = 10). Eighty-six (86) service users also completed a written survey to capture demographic information and assess knowledge of HIV and willingness to use HIV preventive care. All interviews were audio-recorded, translated into English, and then coded according to constructs developed with the Recovery Capital Framework. Following coding, a thematic analysis was conducted for the qualitative data using the framework developed by Braun and Clarke. **Results:** Service users were generally positive about the treatment they were receiving, but identified gaps in health service provision related to HIV, as well as a lack of preparation to address the employment-related challenges they face in the community after completing treatment. Service providers largely agreed with users' perceptions of needs and identified a lack of clinical personnel in sober houses and funding challenges as barriers to meeting these needs. **Conclusion:** Sober houses provide treatment services to Tanzanians with SUD that service users largely view as positive. This evaluation identified employment challenges after treatment completion and gaps related to HIV care in the sober house. Further research is needed to investigate how interventions can be adapted to the sober house setting to meet these needs

184. Ji, X.M., Dong, X.X., Li, J.P., *et al*… *(*2025). Fisetin Clears Senescent Cells Through the Pi3k-Akt-Bcl-2/Bcl-xl Pathway to Alleviate Diabetic Aortic Aging. *Phytotherapy Research*, Vol. 39(6). Doi:/10.1002/ptr.8507.

Abstract

Vascular aging is a major contributor to age-related cardiovascular diseases (CVDs) and type 2 diabetes mellitus (T2DM) induced early arterial aging and excessive senescent cells (SCs) burden in vessels. Inhibiting cellular senescence or eliminating SCs could effectively improve aging-related CVDs. Fisetin, a flavonoid extracted from *Cotinus coggygria* scop, has shown potential in alleviating aging by clearing SCs. This study investigated the unexplored mechanisms and efficacy of fisetin in alleviating T2DM-related aortic aging. The T2DM mouse model was induced using a high-fat diet and low-dose streptozotocin injection. Chronic fisetin treatment's protective effects

against aortic aging were assessed via senescence-associated beta-galactosidase (SA-β-Gal) staining, histopathology, and vasomotor function. RNA-sequencing and western blotting identified relevant signaling pathways and protein expression. Fisetin's effects on SCs and senescence-associated secretory phenotype (SASP) factors were evaluated through cell viability, apoptosis, and co-culture assays. Docking simulations suggested fisetin as a potential Phosphoinositide 3-kinase (Pi3k) inhibitor. In vivo, chronic fisetin treatment reduced aortic SCs burden**,** alleviating T2DM-related and natural aortic aging. In vitro, fisetin selectively induced apoptosis of senescent endothelial cells via regulating the Pi3k-Protein Kinase B (Akt)-B-cell lymphoma (Bcl)-2/Bcl-xl pathway and suppressed SASP and its detrimental effects. Furthermore, fisetin combined with metformin therapy showed superior anti-aging effects on T2DM-related aortic aging compared to metformin monotherapy. In conclusion, chronic fisetin treatment alleviates T2DM-related aortic aging via clearing the SCs burden and abrogating the SASP factors. Fisetin combined with metformin therapy might be a potential therapeutic strategy for T2DM-related CVDs.

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185. Jiang, Y., Liang, D., Zhao, J., *et al*... (2025). Bridging urban-rural disparities in malaria care during pregnancy in Senegal: evidence from household and health facility surveys. *Infectious diseases of poverty*, Vol. *14*(1). Doi:10.1186/s40249-025-01341-5.

Abstract

Background: Despite the World Health Organization's recommendations, the uptake of Intermittent Preventive Treatment in pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) in Senegal remains suboptimal, with disparities observed between urban and rural areas. More remains to be known about how malaria service readiness would affect the utilization of IPTp-SP. **Methods:** Data were obtained from seven annual rounds of Demographic and Health Surveys (DHS) and Service Provision Assessments (SPA) in Senegal from 2012 to 2019. Using sample domain linkage to link the databases at the regional level. A malaria service readiness index was calculated to quantify the malaria service delivery capacity within the service environment where women reside. The Heckman selection model was utilized to analyze the relationship between malaria service readiness and IPTp-SP utilization. **Results:** From 2012 to 2019, the average number of IPTp-SP doses received in Senegal was 1.66 (95% *CI:* 1.65–1.68), higher in urban areas [1.73 (95% *CI:* 1.71–1.75)] than rural areas [1.63 (95% *CI:* 1.62–1.65)]. Each one-point increase in malaria service readiness led to a rise of 0.251 doses in IPTp-SP. The significant interaction (Coef. = − 0.523, $P < 0.001$) indicated that women in rural areas received fewer doses of IPTp-SP (0.089) than in urban areas (0.612) for every unit increase in malaria service readiness. **Conclusions:** Linking household and health facility surveys revealed significant room for improvement in malaria service readiness and IPTp-SP utilization in rural areas in Senegal. For better IPTp-SP coverage, differential strategies are required for urban and rural settings. Urban areas need to enhance malaria service readiness, while rural areas should focus on improving service readiness alongside infrastructure and community engagement to bridge the urban-rural disparities.

186. Jonas, N., Valerian, D.M., Henry, S., *et al*… (2025). Prevalence and antimicrobial susceptibility pattern of gram-negative bacteria contaminating the hands of patients' visitors at regional referral hospitals in Dar-es-Salaam. *PLoS One,* Vol. 20(3). Doi: 10.1371/journal.pone.0320700.

Abstract

Background: Hand contamination by bacteria is a significant source of infection transmission, especially in hospital settings. A healthcare-associated infection is one that a person contracts as a result of their interaction with a hospital. Health care workers', patients' and visitors' hands are all transmission routes for infections, in particular bacterial infections. These infections elevate the economic burden on healthcare systems especially in low-income settings. **Objective:** To determine the prevalence of gram-negative bacteria hand contamination among patients' visitors of referral hospitals in Dar es Salaam. **Methodology:** This was a cross-sectional study conducted at 3 regional referral hospitals: Amana, Temeke and Mwananyamala in March 2023. Dominant hand swabs from 388 systematically selected visitors were taken for bacterial culture and a short interview was conducted to assess factors associated with Gram-negative bacterial hand contamination. Hand swabs collected were cultured on Mac Conkey Agar (MCA), isolates were identified by VITEK MS and appropriate antibiotics were employed in antibiotic susceptibility testing of the isolated Gram-negative bacteria. **Results:** Prevalence of gram-negative bacterial contamination on visitors' hands was 91 (21.1%) on entry and 103 (30.2%) on exit. The most common bacterial contamination was from *Klebsiella pneumoniae* on both entry and exit points, 37 (41%) and 57 (43%), respectively. Resistance to cephalosporins (Cefotaxime and Ceftriaxone) were the most pronounced. The proportion of ESBL-producing bacteria was significantly higher at exit than at entry. Bacterial contamination was associated with not washing hands, APR = 1.5 (95% CI:1.03-2.17), offering services to the patient, APR = 1.9 (95% CI:1.21-2.87), and longer hospital stays (more than 7 days), APR = 1.5 (95% CI:1.1-2.0). **Conclusion:** To prevent the transmission of bacteria, it is important to emphasize hand hygiene and exposure limits for visitors entering hospital environments.

187. Jones, C., Nyati, M., Zacharia, A., *et al*... (2025). Prevalence, intensity, and associated factors of soil-transmitted helminth and schistosome infections after multiple rounds of preventive chemotherapy among schoolchildren in five selected district councils in Tanzania. *PLoS neglected tropical diseases,* Vol. 19(7). Doi: 10.1371/journal.pntd.0013310.

Abstract

Background: Schistosomiasis and soil-transmitted helminthiasis (STH) are widespread in Tanzania mainland, affecting all 184 districts. The Ministry of Health, through the National Neglected Tropical Diseases Control Program (NTDCP) has addressed these parasitic infections by administering annual preventive chemotherapy (PC) with praziquantel for schistosomiasis and albendazole for STH. This study aimed to assess the prevalence, infection intensity, and associated factors of schistosomiasis and STH among school-aged children (SAC) in five selected district councils of Tanzania after a minimum of five rounds of PC. **Methodology/Findings:** A cross-

sectional survey was carried out in five district/town councils; Iringa District Council (DC), Nanyamba Town Council (TC), Ruangwa DC, Tanganyika DC, and Kalambo DC. We randomly selected 15 wards within each DC/TC and then chose one primary school from each ward, totaling 15 schools per district. From each school 30 children (15 boys and 15 girls) aged 10–14 years were sampled, totaling 2250 participants. Urine samples were analyzed using filtration methods to detect schistosomiasis, while stool samples were examined using the Kato-Katz method. Demographic, and water, sanitation and hygiene (WASH) data were also collected through standardized questionnaires. The prevalence of any STH infection varied across the councils, with the lowest prevalence in Iringa DC (0.7%) and highest prevalence in Tanganyika DC (7.1%). For schistosomiasis, the overall prevalence of any schistosome infection was 9.3%. Nanyamba TC reported the highest prevalence at 21.8%, while Iringa DC recorded the lowest at 2.0%. **Conclusion**: The study indicates that STH prevalence remains relatively low (< 10%) in the majority of surveyed districts, however four out of five surveyed districts require distribution of PC once per two years for five years. For schistosomiasis, all district had at least one ward that require annual distribution of PC for the entire population (aged ≥2 years) for 5 years.

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188. Jordan, M., Forsythe, S., Njau, P., *et. al*… (2025). Establishing a Management System for Tracking HIV Service Delivery Costs and Resource Allocation in Tanzania. *VeriXiv*, Vol. 2(259). Doi:10.12688/verixiv.1957.1.

Abstract

Background: Activity-Based Costing and Management (ABC/M) is a standardized approach for generating patient- and facility-level cost data to inform resource allocation and improve efficiency. Traditional costing studies are resource-intensive, one-off exercises, limiting their utility for ongoing planning. In Tanzania, evolving HIV service models and input costs created a need for a streamlined, longitudinal update system. Tanzania's HIV burden remains high, with 1.7 million people living with HIV in 2023. National reforms—including multi-month dispensing and salary increases—have altered costs and service delivery since the original ABC/M study (2020–2021). **Methods:** We implemented a five-step streamlined ABC/M update: (i) securing institutional commitment; (ii) selecting a focused facility sample; (iii) revising process maps via staff interviews; (iv) updating unit costs; and (v) applying macroeconomic adjustments. Data were collected at five facilities from the original sample. An interactive dashboard was developed to visualize cost data and enable scenario analyses. **Results:** For clients newly initiating ART, per-visit costs declined by 6.5% due to reduced ARV prices (USD 5.30 to 3.10/month). Among stable clients, annual costs fell 22.9% from lower TDF+3TC+DTG prices (USD 5.22 to 3.10/month) and expanded multi-month dispensing (3- to 6-month intervals). Costs for unstable clients rose slightly (1.3%) as monthly visits remained. PMTCT services saw a 5.3% per-visit increase, with salary and service delivery inputs offsetting medication savings. HIV testing and counseling (HTC) had the largest increase (17.7% per visit), driven by personnel cost hikes from the 2020 salary adjustment, accounting for 72.0% of the rise. Updated process maps revealed more formalized pathways, task shifting, data clerks, biometric registration, and opportunistic infection screening—aligning with national priorities. **Conclusions:** The longitudinal system, established with limited resources,

produced timely, actionable insights. Standardizing the update process creates a practical, scalable model for other countries to assess HIV service delivery costs and inform resource planning.

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189. Joseph, A.L., Larry, O.A., Athuman, M., *et al*… (2025). Factors Influencing Advanced Stage Presentation among Women with Breast Cancer Attending at Muhimbili National Hospital: A Cross-Sectional Study. *Tanzania Medical Journal*, Vol. 36(4). Doi:10.4314/zn8xg118.

Abstract

Background: Breast cancer is the second most common malignancy affecting women in Tanzania, with most patients presenting at an advanced stage. Delayed presentation is thought to be a key contributor, influenced by various socio-demographic and healthcare access factors. However, tumour biology may also play a role. **Objective:** This study aimed to determine the proportion of women presenting late with breast cancer, identify factors associated with delayed presentation, and assess the relationship between delay and advanced-stage diagnosis. **Methods:** We conducted a cross-sectional study involving 127 women with histologically confirmed breast cancer at Muhimbili National Hospital between January and December 2022. Data were collected through structured interviews and medical records to assess sociodemographic, clinical, and pathological variables. Delayed presentation was defined as seeking care more than three months after symptom onset. The study had approximately 75.8% power to detect the association between delayed presentation and late-stage breast cancer diagnosis. Bivariate and multivariate logistic regression analyses were performed to identify factors associated with delayed presentation (defined as presenting more than three months after symptom onset). Associations between delay, tumour characteristics, and stage at diagnosis were also assessed. **Results:** Of the 127 patients, 57.5% presented with delayed care. Factors significantly associated with delay in bivariate analysis included age ≥50 years ($p=0.021$), unemployment ($p=0.046$), lack of formal education ($p=0.009$), absence of health insurance ($p=0.042$), rural residence ($p=0.015$), reliance on motorized transport ($p=0.021$), and not performing breast self-examinations ($p<0.001$). In multivariate analysis, only not practicing breast self-examination remained a significant independent predictor (OR=4.3, 95% CI: 1.6–11.2, $p=0.003$). Delayed presentation was significantly associated with advanced-stage disease ($p=0.005$). However, approximately one-third of timely presenters still had advanced disease, suggesting that aggressive tumour biology—particularly Luminal B subtype—also plays a role. **Conclusion:** Delayed presentation is common among women with breast cancer at MNH and is significantly associated with advanced-stage diagnosis. However, biological tumour aggressiveness also contributes to disease progression, underscoring the need for improved diagnostic workup and tailored treatment pathways.

Keywords: *Breast cancer, Delayed presentation, Diagnostic delay, Stage at diagnosis, Tanzania, Tumour biology, Luminal B subtype.*

190. Juma, D., Stordal, K., Kamala, B., *et al.*… (2025). Changes in Health Facility Readiness for Providing Quality Maternal and Newborn Care After Implementing the Safer Births Bundle of Care Package in Five Regions of Tanzania. *Healthcare*, Vol. 13 (23). Doi: 10.3390/healthcare13233060

Abstract

Background: Maternal and newborn morbidity and mortality remain a pressing challenge with uneven progress globally and in Tanzania. The capacity of health facilities to provide quality care is critical to improving outcomes. This study aimed to assess changes in health facilities' readiness to provide quality maternal and newborn care, and hence aimed to inform improvements in quality-of-care interventions in Tanzania. Methods: A before and after assessment of 28 comprehensive emergency obstetric and newborn care health facilities implementing the Safer Births Bundle of Care package in five regions of Tanzania was carried out in December 2020 and January 2023. We adapted the World Health Organization's Service Availability and Readiness Assessment tool, which covered amenities, equipment, staff, guidelines, medicines, and diagnostic facilities. Composite readiness scores were calculated for each category and results were compared at the health facility level. For categorical variables, we tested for differences by Fisher's exact test; for readiness scores, differences were tested by linear fixed and mixed model analyses, considering dependencies within the regions. We used $p < 0.05$ as our level of significance and measured change from baseline using a paired t-test. Results: The overall readiness improved significantly from 67.6% to 83.7% ($p < 0.05$). Statistically significant improvements were seen in medical equipment (77.1% to 94.0%), diagnostic/treatment commodities (69.3% to 83.1%), and availability of guidelines (50.8% to 96.7%). Changes in amenities (78.1% to 84.2%) and staff (63.0% to 61.7%) were not significant. The overall readiness improved in all facility types and the change was statistically significant in district hospitals and health centres ($p < 0.05$). There were significant differences in improvement between regions ($p < 0.05$). Conclusions: The overall readiness has improved significantly, reflecting a positive change. However, there remains a need for further enhancement, particularly in terms of staffing, to ensure high-quality maternal and newborn care. Authorities should take swift action to address the identified gaps, selecting the most effective and practical interventions while closely monitoring progress in readiness and sustaining the gains. Keywords: quality improvement, health facility readiness, quality of care, newborn, neonatal care, maternal care, SARA.

191. Juma, P., Kibwana, U., Charles, A., *et al.*.. (2025). Clinical and laboratory indicators predicting coagulase-negative staphylococci as a cause of bloodstream infection among children below five years of age admitted at a tertiary hospital in Dar es Salaam, Tanzania. *Annals of Medicine*, Vol. 57(1). Doi:10.1080/07853890.2025.2506507.

Abstract

Background: Coagulase-negative staphylococci (CoNS) are the most commonly isolated bacteria from blood cultures and the most considered contaminants. We conducted a study to assess clinical and laboratory indicators predicting CoNS as a cause of bloodstream infections using two sets of blood cultures among under-five children in Dar es Salaam, Tanzania. In addition, we determined

the antimicrobial susceptibility patterns of CoNS. **Materials and methods:** This cross-sectional study involved 246 children clinically diagnosed with bloodstream infections admitted to a tertiary hospital. Two sets of blood cultures were collected per patient. Blood samples were tested for microbial growth and antimicrobial susceptibility. Indicators independently predicting CoNS as a cause of bloodstream infection were calculated by binary logistic regression analysis, receiver operating characteristic (ROC) curve analysis to assess the diagnostic performance of predictors. A *p*-value <0.05 at 95% confidence intervals was considered significant. **Results:** Of 246 patients, 100(40.7%) were positive blood cultures. CoNS were the most prevalent, isolated in 51(51.0%) blood cultures. Of 51 blood cultures with CoNS, 40(78.4%) were isolated in both blood culture bottles of a set and were regarded as causative of bloodstream infection,of this 34(85.0%) were methicillin resistance CoNS. Multivariate analysis identified tachycardia (aOR = 14.69, 95%CI 1.36–158.42, $p = 0.027$) and *in situ* intravenous cannulation (aOR = 66.75, 95%CI 3.61–1234.40, $p = 0.005$) as significant predictors of CoNS bloodstream infection, with a prediction score of 94.1%. The ROC curve analysis demonstrated tachycardia and *in situ* intravenous cannulation had AUC > 0.7 ($p < 0.05$). The CoNS were frequently resistant to penicillin (97.5%), erythromycin (82.5%), and trimethoprim-sulfamethoxazole (77.5%). **Conclusions:** CoNS remains the most common bacteria causing bloodstream infections. *In situ* intravenous cannulation and tachycardia were potential clinical indicators in improving early diagnosis of CoNS as a cause of bloodstream infections and guiding timely treatment decisions. High antimicrobial resistance observed necessitating strengthening of antimicrobial stewardship.

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192. Justiniano, J., Mwanga, A.H., Kitua, D.W*, et al*... (2025). Creating a sustainable and inexpensive dry animal training model for liver surgery in low-and middle-income countries. *ecancermedicalscience*, Vol.*19*. Doi:10.3332/ecancer.2025.1911.

Abstract

Background: The growing global demand for surgical simulation training is particularly challenging in low- and middle-income countries (LMICs), where access to advanced technology is limited. Despite increasing demand for these services, hepatobiliary surgical training in LMICs is constrained by a need for more training facilities and experts. We, therefore, designed a feasible, cost-effective liver surgery training model using bovine liver. We hypothesise that this sustainable model can significantly enhance surgical training in LMICs. Methods: A bovine liver was procured from a local slaughterhouse, with careful preservation of its vascular structures. The specimen was transported to the Muhimbili University of Health and Allied Sciences' Laboratory and prepared using a back-table technique. Major vessels were connected to a water flow system, simulating near-physiological central venous and arterial pressures. These parameters were adjusted to mimic real-time effects, creating a training environment similar to that of an actual surgical candidate. Findings: A partial hepatectomy was successfully performed using the crush-clamping technique. Hydrodynamic alterations and simulated bleeding were effectively managed through the Pringle maneuver, suture ligation and stick-tying techniques. The procedure was completed in approximately 1 hour, with an estimated blood loss of 700 mL. Conclusion: An inexpensive, ethical and sustainable bovine liver model was designed for surgical training. This simulation can be easily replicated in training facilities across LMICs to enhance surgical

education, particularly in hepatobiliary surgery. **Keywords:** animals, hepatectomy, simulation training, Sub-Saharan Africa, cost-benefit analysis.

193. Kabelege, A.P., Timoth, S., Ezekiel, M.J., *et. al*… *(*2025). Exposure to Social-Media HIV Testing Messages and HIV Self-Testing Among Young University Adults in Dar es Salaam, Tanzania: A Cross-Sectional Study.E*ast African Journal of Health and Science,* Vol. 8(3). Doi:10.37284/eajhs.8.3.3990.

Abstract

Digital platforms have become an important tool for promoting public health interventions, including HIV prevention behaviours. In Tanzania, since 2022, the Ministry of Health, together with other stakeholders, has been promoting HIV self-testing (HIVST) messages under the "JIPIME" campaign, a Kiswahili term meaning "test yourself," across various social media platforms to increase awareness and uptake among young people. However, little is known about the level of exposure to these messages among young adults and whether such exposure influences HIVST uptake. Therefore, this study assessed exposure to HIV testing content on social media and examined its association with HIVST uptake among university students aged 18–24 years in Dar es Salaam. To address this, an analytical cross-sectional study was conducted among adults aged 18–24 years from Kampala International University in Tanzania (KIUT) and the Dar es Salaam Institute of Technology (DIT). A total sample of 365 students was recruited using multistage cluster sampling, comprising 193 from DIT and 172 from KIUT. Data were collected using self-administered questionnaires. Descriptive statistics, including means, standard deviations, and percentages, were computed, while chi-square tests and multivariable logistic regression were used to examine associations between exposure to HIV testing content and HIVST uptake ($p < 0.05$, 95% CI). The study found that 52% (n = 191) of participants reported encountering HIV testing-related content on social media, while 48% had not. The overall uptake of HIV self-testing was 21%. Among those who had self-tested, 80% had been exposed to HIV testing content on social media. In the adjusted analysis, exposure was significantly associated with higher odds of ever self-testing (AOR = 12.0, 95% CI: 2.41–24.52, $p < 0.01$). Limited knowledge of how to use HIVST kits emerged as the main barrier to uptake. The findings demonstrate that exposure to HIV testing content on social media substantially influences HIVST uptake among young adults. Expanding targeted digital outreach and addressing knowledge gaps on the correct use of HIVST kits are critical strategies for improving uptake and advancing HIV prevention efforts among youth in Tanzania.

194. Kagaruki, G.B., Karoli, P.M., Rutahoile, W.M., *et al*… (2025). Assessment of community knowledge on non-communicable diseases to inform the pilot of WHO PEN-Plus initiatives in the selected two districts in Tanzania.*Plos one.* Doi: 10.1371/journal.pone.0321695.

Abstract

Background: Non-communicable diseases (NCDs) have increased significantly in Tanzania, accounting for 33% of mortality in the country. Having adequate knowledge translated into

practice has a significant effect on the health of individuals through adoption of positive behaviours and influencing better health seeking behaviours. For those already affected by NCDs, it promotes secondary and tertiary prevention by helping them effectively cope with the disease. In this study, we aimed to determine the level and determinants of NCDs knowledge in the community to inform the implementation of WHO PEN- Plus initiatives. **Methods:** This cross-sectional study was conducted from May to June 2023 involving 528 adults aged 25–64 years from two purposely selected districts and 11, 22 and 528 randomly selected wards, villages, and households respectively. Information on socio-economic, demographic, NCDs knowledge were collected from each participant. Chi-square test and Modified Poisson Regression were applied to assess the association and determinants of NCDs knowledge level. **Results:** The median age of study participants was 40.5 years. Less than half 42.6%(n=225) were aware of the term NCD and less than one third were aware of the NCD conditions such as Type 1 Diabetes Mellitus (T1DM) 15.3%(n=70), Sickle Cell Disease (SCD) 25.2%(n=133), Rheumatic fever 28.6%(n=151) and Heart failure 33.1%(n=175). Good level of awareness was reported on Type 2 Diabetes Mellitus (T2DM) 79.5%(n=364). More than three quarters of the respondents had low knowledge on T1DM (90.3%), SCD (84.1%), Rheumatic fever (81.3%), NCDs (80.5%) and Heart failure (76.1%). Furthermore, more than half (56.4%) of respondents had low knowledge for T2DM. Adjusted analysis indicated that, for all NCDs except SCD, low knowledge was significantly associated with the district of residence (Kondoa). Low knowledge of NCDs, T2DM, and SCD was significantly associated with having no education, or having only primary or secondary education. Individuals from the lowest, second, middle, and fourth socio-economic status families were significantly associated with low knowledge of NCDs, while the lowest and fourth socio-economic status levels were associated with low knowledge of T2DM and SCD. **Conclusion:** Low knowledge was observed for all NCD conditions and socio-economic and demographic characteristics were associated with low knowledge. Interventions to increase NCD knowledge should consider the socio-economic determinants

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195. Kagina, P.S., Yoram, F. (2025). Factors Contributing to Errors During Radiotherapy in a Resource-constrained Setting: Experience from Ocean Road Cancer Institute in Tanzania. *Tanzania Journal of Health Research,* Vol 26(3). Doi:10.4314/thrb. v26i3.2.

Abstract

Background: Various factors have been identified as contributing to errors during radiotherapy. However, there is limited data on these factors in Tanzania's radiotherapy settings. Understanding these factors is essential for developing strategies to reduce errors in radiotherapy. **Objective:** To investigate staff experiences with factors that contribute to errors during radiotherapy at the Ocean Road Cancer Institute. **Methods:** In-depth interviews were conducted with 10 staff members involved in radiotherapy planning and delivery at the Ocean Road Cancer Institute from June to July 2023. The data was analyzed using qualitative content analysis. **Results:** Five key categories emerged from the data, highlighting staff experiences with factors leading to errors in radiotherapy. These categories were: the use of outdated and malfunctioning equipment, negligence, a stressful working environment, the absence of an error monitoring system, and communication breakdowns. **Conclusion:** This study identifies several factors contributing to

errors during radiotherapy. The findings emphasize the need for accurate and reliable equipment, improved staff practices, better working conditions, and the establishment of a robust error-monitoring system.

196. Kagoma, P., Kengia, J.T., Kihulya, M., *et al*… (2025). Strengthening the Primary Healthcare as a Vehicle Towards Achieving Universal Health Coverage in Tanzania: Lessons from the First International Primary Health Care Conference. *The Pan African Medical Journal*, Vol. 52(1). Doi: 10.11604/pamj.supp.2025.52.1.46895.

Abstract

Primary Healthcare (PHC) is a cornerstone of Tanzania's healthcare system, serving as the first point of contact for most citizens and playing a crucial role in achieving Universal Health Coverage (UHC). Despite progress, challenges such as resource constraints, workforce shortages, and infrastructure gaps persist, requiring strategic investments and policy reforms. The first International Primary Healthcare Conference (iPHC) in 2024 provided a platform for stakeholders to discuss best practices and develop actionable recommendations to strengthen PHC. Key outcomes included four policy papers emphasizing community engagement, integration of health services, and sustainable funding models. Moving forward, collaborative efforts among policymakers, healthcare workers, and researchers will be essential to advancing PHC and ensuring equitable access to quality healthcare in Tanzania.

197. Kahindi, V., Ambikile, J.S., Mkoka, D., *et. al*... (2025). Knowledge on CLABSI Prevention Strategies and Associated Factors Among ICU Nurses in Dar es Salaam. *The East African Health Research Journal*, Vol. 9(1). Doi:10.24248/eahrj. v9i1.838.

Abstract

Background: Central line-associated bloodstream infection (CLABSI) is one of the major complications for patients with central lines (CLs) and a leading hospital-acquired infection. This infection is associated with increased length of hospitalization, medical costs, high morbidity, and mortality. As primary caregivers for patients with CLs in the ICU, nurses are crucial in preventing CL-related infections and complications. Despite this key role, there is limited knowledge about ICU nurses' understanding of CLABSI, especially in low-income countries like Tanzania. **Aim:** This study aimed to assess knowledge on CLABSI prevention strategies and associated factors among ICU nurses in Dar es Salaam, Tanzania. **Methods:** A quantitative cross-sectional analytical study was conducted among 250 ICU nurses in 3 tertiary hospitals. Data were collected from May to July 2023 using a self-administered questionnaire, with CLABSI knowledge assessed using 32 items. SPSS version 25 was employed to analyze data, and logistic regression was performed to identify factors associated with knowledge of CLABSI prevention strategies. In all analyses, statistical significance was set at a p-value <.05. **Results:** The mean knowledge score was 52.2% (SD = 10.7), with a median of 50%. Among the participants, only 52 (28.2%; 95% CI: 22.6%–33.8%) demonstrated a high level of knowledge regarding CLABSI prevention strategies and care. Receiving in-service CL training (AOR = 5.20; 95% CI: 1.79–15.07; p =.002), the availability of CLABSI prevention guidelines (AOR = 2.52; 95% CI: 1.05–6.03; p=.038), and the absence of pre-

service CL training (AOR = 3.05; 95% CI: 1.33–6.97; p=.008) were significantly associated with higher knowledge of CLABSI prevention strategies and care. **Conclusion:** ICU nurses demonstrated generally inadequate knowledge of CLABSI prevention strategies, with less than one-third (28.2%) showing a high level of knowledge. In-service CL training, availability of CLABSI guidelines, and absence of pre-service training were significantly associated with higher knowledge, suggesting the strong influence of practical, workplace-based learning. Targeted in-service training and consistent provision of evidence-based guidelines are essential to strengthen ICU nurses' competence, reduce CLABSI incidence, and improve patient safety.

198. Kai, Q., Ping, L., Fulong, Z., *et al*… (2025). Biomimetic Design and Performance of TPMS Radial Continuous Gradient Porous Bone Scaffolds. *Metals and Materials International*, Vol. 31(11). Doi:10.1007/s12540-025-01945-4.

Abstract

In this study, radial pore continuous gradient porous bone scaffolds were designed and optimized based on the Gyroid single-cell structure to meet the demand for high-performance bone implants in bone tissue engineering. Ti–6Al–4V alloy scaffolds with varying single-cell sizes and porosities were fabricated using laser powder bed fusion (PBF-LB) technology for comparative analysis. The findings revealed that the radial pore continuous gradient porous structure exhibited superior mechanical properties and permeability, coupled with a large specific surface area and a helical trajectory for fluid permeation. These features significantly enhanced cell attachment and promoted bone regeneration. The mechanical properties of the scaffolds were further refined, and their toughness was improved through heat treatment of the Ti–6Al–4V alloy. Among the tested designs, the G3-60 scaffold demonstrated the most balanced performance, achieving an elastic modulus of 8.23 GPa, a yield strength of 300.09 MPa, a maximum specific surface area of 3559.362 mm^2, and a permeability of $2.984 \times 10^{-3} m^2$ at a flow velocity of 0.1 mm/s. This scaffold not only provides exceptional mechanical load-bearing capacity and permeability but also offers a substantial surface area to support osteoblast attachment and proliferation. These results provide critical theoretical insights and technical guidance for the future design and clinical application of advanced bone implants.

199. Kaitira, B., Uledi, M., Mashaka, A., *et al*... (2025). Post-traumatic acute Marjolin ulcer with a short latency period in a young man: a case report. Journal of Medical Case Reports, Vol. 19(1). Doi: 10.1186/s13256-025-05314-

Abstract

Background: Marjolin ulcer was first mentioned by Celsius in the first century as a malignant transformation of burn scars, which can be caused by chronic wounds. Marjolin ulcer has been observed to have a latent period of over 10 years and occasionally even 36 years, with a small number of reports of short latent periods. Squamous-cell carcinoma (SCC) is the most common histology and is often characterized by an ulcerated wound around the injury site with raised margins. Marjolin ulcer squamous-cell carcinoma's poor vascularity makes it difficult for it to respond to chemotherapy and radiotherapy. There is lack of data on acute Marjolin ulcer related to

post-traumatic wounds in sub-Saharan Africa. We are reporting on a rare case of acute Marjolin ulcer squamous-cell carcinoma of the lower limb that was treated at Ocean Road Cancer Institute in Tanzania. The authors sought to enhance awareness of acute Marjolin ulcer in low- and middle-income countries. **Case description**: This is a case of a 35-year-old male patient of African origin who was working as an agriculture officer and was involved in a motor bicycle traffic accident 6 years prior at the age of 29 years and sustained facial, chest, and right lower limb injuries, which healed by secondary intention 3 months later. A total of 6 months later, he was diagnosed with invasive squamous-cell carcinoma around the lesions in his right knee. The patient was treated with surgery, chemotherapy, and radiotherapy. **Conclusion:** To our knowledge, this is likely to be the first reported case of acute Marjolin ulcer in East Africa and the third in Africa. This highlights the challenges in diagnosing and managing acute Marjolin ulcer in low- and middle-income countries. The short latent period of acute Marjolin ulcer in Africa necessitates genetic and immunological studies. Where possible, deep chronic wounds should be grafted, while unstable scars should be excised and grafted

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200. Kakulu, R., Ndunguru, F., Rugarabamu, S., *et al*... (2025). Seroprevalence and associated risk factors of selected arboviruses at Namanga and Mutukula cross-border areas in Tanzania. *IJID regions*. Doi: 10.1016/j.ijregi.2025.100719.

Abstract

Objectives: Dengue (DENV), Chikungunya (CHIKV), and West Nile (WNV) viruses are among the major mosquito-borne arboviral threats in East Africa. This study assessed seroprevalence and risk factors for DENV, CHIKV, and WNV among residents of Mutukula and Namanga cross borders in Tanzania. **Methods:** Blood samples were collected from 450 participants and tested using an enzyme-linked immunosorbent assay for anti-viral immunoglobulin G and M (IgG and IgM) antibodies. Descriptive and multivariate logistic regression analyzed risk factors. **Results:** Overall seroprevalence was 12.4% for DENV, 10.7% for CHIKV, and 10.2% for WNV. Namanga had higher IgM seroprevalences (DENV: 9.7%, CHIKV: 6.9%, and WNV: 6.3%) than Mutukula (DENV: 5.6%, CHIKV: 5.3%, WNV: 5. 9%). IgG seropositivity for CHIKV was linked to a history of travel abroad (adjusted odds ratio [AOR] 7.3, 95% confidence interval [CI] 1.01-54.6), mosquito exposure (AOR 2.8, 95% CI 1.01-7.7), and being female (AOR 6.1, 95% CI 1.3-28). IgM seropositivity was influenced by education, with secondary levels reducing risk (AOR 0.11, 95% CI 0.02-0.64 for DENV; AOR 0.06, 95% CI 0.1-0.6 for CHIKV). **Conclusion:** This study provides the first evidence of WNV exposure in Tanzania and specific cross-border seroprevalences for DENV and CHIKV transmission. To mitigate the risks, Integrated vector control and enhanced surveillance are highly recommended.

201. Kalabamu, F.S., Daudi, V., Moshiro, R.D., *et al*… (2025). Acceptability Among Healthcare Providers of In Situ, Low-Dose, High-Frequency Neonatal Resuscitation Simulation Training Using Innovative Tools: Evidence from the Safer Births Bundle of Care. *Children,* Vol. 12(9). Doi:10.3390/children12091150.

Abstract

Introduction: Newborn mortality is unacceptably high, especially in low- and middle-income countries. The Safer Births Bundle of Care (SBBC) was implemented in Tanzania, including training of healthcare workers on neonatal resuscitation by means of frequent in situ simulation training using improved training tools. We aimed to assess the acceptability of this training model among healthcare providers in selected health facilities under the SBBC intervention. **Methods**: A cross-sectional study was conducted among healthcare workers in labour wards and obstetric theaters in selected facilities one year after the introduction of the SBBC model. The theoretical framework for assessment of the acceptability of healthcare interventions was used to assess the acceptability of the training model and accompanying tools. The chi-square test was used to assess the association between acceptability in specific constructs and average individual practice per month, while a modified Poisson regression analysis was used to assess factors associated with acceptability in specific framework constructs. **Results:** A total of 227 healthcare workers were enrolled in the study. Overall, 223 (98.2%) accepted the intervention. However, 207 (91.2%) reported that the intervention increased their work burden, while 39 (17.2%) reported that it interfered with other equally important activities. The level of health facility was independently associated with the reporting that engaging in simulation practice interfered with other equally important activities. **Conclusions:** In situ, low-dose, high-frequency facility-based simulation training for neonatal resuscitation was highly acceptable among healthcare providers. However, the perceived increased work burden of this intervention and interference with other equally important activities were identified as potential threats to successful implementation.

Keywords: *acceptability; simulation; resuscitation; Neonatalie Live; NeoBeat.*

202. Kalala, J., Mloka, D. (2025). Burnout levels among undergraduate pharmacy students. *Pharmacy Education,* Vol. 25(1). Doi:10.46542/pe.2025.251.264272.

Abstract

Background: Burnout is a multi-dimensional syndrome characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. Burnout among students has been associated with increased absenteeism, lower academic performance, and higher dropout rates. This study aims to determine the levels and factors associated with burnout among Tanzanian pharmacy students. **Methods:** The study utilized a multi-method study design. A descriptive cross-sectional study was conducted using a structured questionnaire based on the Maslach Burnout Inventory-Student Survey (MBI-SS) instrument to determine levels of burnout and Focus Group Discussions (FGDs) to explore factors associated with burnout. **Results:** A total of 428 undergraduate Pharmacy students were enrolled in the study. The mean age of participants was 23.21 ± 0.14. The overall burnout prevalence was 36.5%, of which emotional exhaustion was

the most prevalent domain of burnout at 79.44%. Male gender was a significant predictor of emotional exhaustion [OR = 4.34; 95% Cl 1.43-6.64; P-value 0.002]. Being in the second, third, and fourth years was also a significant predictor of emotional exhaustion (p-value = 0.014, 0.008, and 0.014, respectively). **Conclusion:** There is a high risk of burnout among Tanzanian pharmacy university students. Factors such as non-conducive learning environments, overpacked curricula, and lack of support services were associated with burnout.

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203. Kalison, N., Luoga, P., Nyangi, E*, et al*... (2025). Implementation of project procurement management in the health sector: a case of the medical stores department in Tanzania. *Discover Health Systems*, Vol. *4*(1). Doi:10.1007/s44250-025-00252-4.

Abstract

Effective project procurement management is crucial for ensuring the timely and cost-efficient acquisition of goods and services in the health sector. In Tanzania, the Medical Stores Department (MSD) plays a central role in procuring, storing and distributing medical supplies to healthcare facilities nationwide. However, procurement processes in the health sector often face challenges such as inefficiencies, delays, regulatory constraints, and financial limitations, which in return impacts service delivery and health outcomes. This study aimed at exploring the practices of project procurement management of medicines and medical supplies at the MSD in Tanzania. A qualitative cross-sectional study design employing a qualitative approach in data collection process was used to explore the practices of procurement of medicines and supplies at the MSD in Tanzania. A purposive sampling approach was used to select 17 participants dealing with procurement processes at MSD; Managers, staff from finance department, accounts, procurement, and supply chain units, as well as tender board members were included in this study. A structured interview guide was used to conduct the interviews with the selected participants. A thematic approach was used to analyse the data and findings presented as themes and sub-themes. Study findings reported that, planning procurement is the first phase taken by MSD, whereby annual procurement plans, tender documents, and specifications are made. The MSD conducts procurement by advertising a tender electronically for about 14–21 days, then opens the tender and forms an evaluation team for the bids and negotiation. Then it prepares letters to inform bidders of the outcomes. In-charge of project procurement at the MSD monitors procurement by comparing delivery schedules, the quality of medicines and medical supplies (MMSs), and the price against the requirements in the contract. In the last phase, MSD closes procurement after the suppliers have been paid off and all documents are stored in the finance department. However, the participants revealed several hindrances to effective implementation of the process, including the occurrence of unforeseen circumstances, procurement taking a long time, and over-reliance of money on receipts in kind from government treasurer. Generally, despite the well-defined stages, several challenges hinder the effective implementation of procurement at MSD. Unforeseen circumstances, prolonged procurement timelines, and financial dependency on government treasury allocations create inefficiencies in the system. To enhance procurement effectiveness, MSD should adopt more flexible procurement strategies, improve process efficiency, and explore alternative funding mechanisms. Strengthening these areas will contribute to a more reliable medical supply chain, ultimately improving healthcare service delivery in Tanzania.

204. Kalison, N., Luoga, P., Nyangi, E, *et al*... (2025). Implementation of project procurement management in the health sector: a case of medical stores department in Tanzania. *Discover Health Systems*, Vol. 4(1). Doi:10.1002/ccr3.70558.

Abstract

Twin gastroschisis pregnancies pose challenges in prenatal diagnosis, especially for multiple pregnancies among radiologists, and therefore impacts postnatal care by neonatologists and pediatric surgeons. This case emphasizes the successful management of twin babies born with gastroschisis, highlighting the role of sutureless abdominal closure in the survival of twin babies.

205. Kaliza, A. C., Mlunde, L. B., Schell, C.O., *et al*... (2025). Lessons learned from the promotion of Essential Emergency and Critical Care in Tanzania–a qualitative study. *BMJ Open*, Vol. 15(10). Doi:10.1136/bmjopen-2024-089229.

Abstract

Objective: To describe the lessons learnt during the promotion of a new approach to the care of critically ill patients in Tanzania, Essential Emergency and Critical Care (EECC). Design A descriptive qualitative study using thematic analysis of structured interviews. **Setting and participants:** The study was conducted in Tanzania, involving 11 policymakers, researchers, and senior clinicians who participated in the promotion of EECC in the country. **Findings:** Five interrelated themes emerged from the promotion of EECC in Tanzania: (1) early and close collaboration with the government and stakeholders; (2) conduct research and use evidence; (3) prioritise advocacy and address misconceptions about EECC; (4) leverage events and embed activities in other health system interventions; and (5) employ a multifaceted implementation strategy. The themes map to the normalisation process theory domains of coherence, cognitive participation, collective action and reflexive monitoring. **Conclusion:** The integration of EECC into Tanzania's health policy is a result of a multidisciplinary collaboration, including government and partners, that has used evidence, advocacy and context and included multifaceted implementation strategies. The lessons from Tanzania's experience guide adoption in similar settings to improve critical care systems, foster access to care and optimal outcomes for all critically ill patients.

206. Kaloya, F., Iseselo, M.K., Lukumay, G. (2025). Lived Experience of Caregivers of Terminally Ill Patients with Cancer: A Phenomenological Study at Ocean Road Cancer Institute in Dar es Salaam, Tanzania. *Psycho-Oncology*. Vol. 34(9). Doi:10.1002/pon.70281.

Abstract

Background: Caregivers face numerous physical and emotional challenges when providing care to people suffering from life-threatening illnesses such as cancer. The study aimed to explore caregivers' experiences in providing care for terminally ill cancer patients in Dar es Salaam, Tanzania. **Method:** A phenomenological study design was conducted among caregivers of terminally ill cancer patients at Ocean Road Cancer Institute (ORCI). A purposive sampling

technique was used to select a sample size of 10 participants. An in-depth interview method was used to collect the data. A semi-structured interview guide with an audio recorder was used to collect the information from the participants. Data were transcribed verbatim and analysed using a thematic analysis approach. **Findings:** The three themes were challenges in caring for patients, availability of social support, and coping strategies. Physical exhaustion and burnout, emotional distress and reduced social interaction were the challenges in caring for patients described by participants during the caring process. Family member support, community support and religious support were the available support systems that facilitated caregivers to care for the patients. However, adopting self-distraction towards patient behaviour, acquiring and using practical skills and following professional guidance were the individual coping strategies used by participants in caring for terminally ill cancer patients. **Conclusion:** Study findings highlight the fundamental role of caregivers in the care, and illuminate the neglected physical, psychological and social challenges they face amidst health system tensions and conflicting roles. The needs of caregivers should be embedded within cancer care, prevention and control programs, particularly in low-resource settings.

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207. Kamala B., Loll, D., Msolla, R., *et al*… (2025). Persistence of Untreated Bed Nets in the Retail Market in Tanzania: A Cross-Sectional Survey. *TropicalMed,* Vol. 10(6). Doi:10.3390/tropicalmed10060175.

Abstract

The private sector in Tanzania has played an essential role in improving coverage and access to mosquito nets. This follow-up study assessed the overall market share for untreated and insecticide-treated nets (ITNs) and misleading or counterfeit ITN products in commercial markets. This study was conducted from March to April 2024 in ten regions in Tanzania. The study used mixed methods: (1) a quantitative survey among sampled outlets supported by photographic documentation of all net products and (2) key informant interviews of retailers and wholesalers. We assessed the relationship between market share and population access using ANOVA and Pearson correlation. No counterfeit or misleading nets were found, consistent with results from 2017, 2021, and 2022 surveys. Untreated nets dominated all markets, comprising 99% of all products observed and 99% of estimated net sales 3 months before the survey. Legitimate ITNs were crowded out from the studied markets. Leaked nets from free distributions were present but extremely limited (1%) and at their lowest level of the survey rounds. Untreated nets were more expensive than leaked ITNs for both regular- and queen-size nets. Despite ongoing efforts, increasing the share of legitimate ITNs remains a significant challenge in a context of large-scale public sector distributions.

Keywords: *insecticide-treated net; counterfeit; retail survey; leaked nets; commercial sector; mosquito net; legitimate ITN.*

208. Kamala, B.A., Elsdel, H.L., Moshiro, D.R., *et al…* (2025). Outcomes of a Program to Reduce Birth-Related Mortality in Tanzania. *The New England Journal of Medicine*, Vol. 392(11). Doi: 10.1056/nejmoa2406295.

Abstract

Background: Birth-related mortality is a major contributor to the burden of deaths worldwide, especially in low-income countries. The Safer Births Bundle of Care program is a combination of interventions developed to improve the quality of care for mother and baby to reduce birth-related mortality. **Methods:** We performed a 3-year stepped-wedge cluster-randomized study of the Safer Births program at 30 high-burden facilities in five regions in Tanzania. The bundle of interventions in the program was aimed at continuous quality improvement through regular onsite simulation-based training, the collection and use of local clinical data, the assistance of trained local facilitators, and the use of innovative tools for perinatal care. The primary outcome was perinatal death, which included intrapartum stillbirth (suspected death during labor) and neonatal death within the first 24 hours after birth. **Results:** A total of 281,165 mothers and 277,734 babies were included in the final analysis. The estimated incidence of perinatal death decreased from 15.3 deaths per 1000 births in the baseline period of the program to 12.5 deaths per 1000 births after implementation (adjusted relative risk, 0.82; 95% confidence interval [CI], 0.73 to 0.92; P=0.001), with substantial heterogeneity among regions. The incidence of intrapartum stillbirths was 8.6 deaths per 1000 births in the baseline period and 8.7 deaths per 1000 births after implementation (adjusted relative risk, 1.01; 95% CI, 0.87 to 1.17), and the incidence of neonatal deaths within the first 24 hours after birth was 6.4 and 3.9 deaths per 1000 births, respectively (adjusted relative risk, 0.61; 95% CI, 0.49 to 0.77). No serious adverse events were reported. **Conclusions:** Implementation of the Safer Births Bundle of Care program showed the feasibility of integrating quality-improvement efforts targeting birth-related emergencies in resource-limited settings and was associated with a significant reduction in perinatal mortality. (Funded by the Global Financing Facility; ISRCTN Registry number, ISRCTN30541755.).

209. Kamala, B.A., Moshiro, R., Kalabamu, F.S., *et al*... (2025). Practice, experiences, and facilitators of simulation-based training during one year of implementation in 30 hospitals in Tanzania. *SAGE Open Nursing*, Vol. *11*. Doi:10.1177/2377960824130944.

Abstract

Introduction: Enhancing the proficiency of healthcare workers (HCWs) in handling birth-related complications is crucial for reducing maternal and newborn morbidity and mortality. To achieve this, the Safer Births Bundle of Care offers a comprehensive set of innovative, simulation-based training interventions designed to strengthen the skills and competencies of HCWs working as skilled birth attendants. Objective: To describe the use of *in-situ* low-dose, high-frequency simulation-based training, and the experiences of this usage among HCWs and stakeholders at facilities in Tanzania**. Methods:** This mixed-methods study included quantitative and qualitative data collected between July 2021 and July 2022 across 30 health facilities in five regions of Tanzania. NeoNatalie Live (NNL) simulators were installed for independent skills and scenario training, and *in-situ* facilitator-led team simulations were introduced. The training frequency was

analyzed using descriptive and analytical statistics, and mentorship and supervision reports were analyzed using qualitative content analysis. **Results:** A large and sustained number of *in-situ* NNL skill-training sessions (n = 35,101) and facilitator-led team simulations (n = 266) were conducted during the first year. Clinical burden per HCW did not affect the frequency of NNL skills training at the health facility level ($r = -0.16$, $p = .40$) nor facilitator-led team simulations. There was a positive but weak correlation between the frequency of facilitator-led team simulations and NNL skills training ($r = 0.34$, $p = .05$). Qualitative data showed a high degree of motivation and participation among all stakeholders, and active use of hospital data, both clinical indicators and training data, was perceived as a success factor. **Conclusion:** Facilitator-led *in-situ* simulation training was more likely to occur where individual skills-training sessions were recorded. Training sessions took place regardless of the increased workload.

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210. Kamara, J., Kishinhi, S., Manyele, A., *et al*… (2025). Association between ambient particulate matter and respiratory health among schoolchildren in Dar es Salaam city, Tanzania: a cross-sectional study. *BMC Public Health,* Vol. 25(1314). Doi:10.1186/s12889-025-22517-6.

Abstract

Background: Urbanization and industrial activities have significantly contributed to the deterioration of air quality, with ambient particulate matter (PM2.5 and PM10) posing a major public health concern in most cities of developing countries. The impact of these pollutants on respiratory health, particularly that of schoolchildren, has remained inadequately studied. **Objective:** This study aimed to determine the level of ambient particulate matter (PM2.5 and PM10) and its association with respiratory symptoms among school children in Dar es Salaam, Tanzania. **Methods:** We conducted a cross-sectional study targeting schoolchildren aged 9–16 to investigate the impact of air pollution on respiratory health. A sample of 427 children was selected through stratified random sampling, which combined primary and secondary data. Standardized questionnaires and air quality monitoring for PM exposure were used to collect data. Analysis methods included descriptive statistics, and logistic regression to elucidate the association between PM exposure and respiratory symptoms. **Results:** The prevalence of respiratory symptoms among the schoolchildren was notably high, with 35.1% reporting coughing, 26.7% wheezing, 31.4% breathlessness, and 28.1% severe chest illness. Significant associations were found between proximity to pollution sources (OR = 3.4, 95% CI: 2.3–5.0, $p < 0.001$ for coughing; OR = 7.0, 95% CI: 2.9–17.2, $p < 0.001$ for wheezing; OR = 3.9, 95% CI: 2.3–6.6, $p < 0.001$ for breathlessness; OR = 6.4, 95% CI: 3.3–12.0, $p < 0.001$ for severe chest illness), household smoking (OR = 1.2, 95% CI: 1.02–1.4, $p < 0.05$ for wheezing; OR = 1.2, 95% CI: 1.01–1.4, $p < 0.05$ for severe chest illness), and the use of biomass for cooking (OR = 2.4, 95% CI: 1.4–4.0, $p < 0.01$ for wheezing; OR = 2.3, 95% CI: 1.4–3.8, $p < 0.01$ for severe chest illness) with the occurrence of respiratory symptoms. Ambient PM levels, particularly PM2.5 and PM10, exceeded WHO limits in several locations. WHO recommends PM2.5 levels below 5 µg/m3 and PM10 below 15 µg/m3, while Dar es Salaam recorded PM2.5 between 35–50 µg/m3 and PM10 between 75–100 µg/m3, significantly higher than recommended. **Conclusion:** The study emphasizes the significant impact of air pollution on the respiratory health of schoolchildren in Dar es Salaam and calls for targeted

interventions to reduce particulate matter exposure, particularly in high-risk urban areas of Dar es Salaam, Tanzania.

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211. Kamori, D., Henry, E., Shedura, V.J., *et al*... (2025). An etiology and Antimicrobial Susceptibility Pattern of Bloodstream Infection among Patients with Chronic Kidney Diseases at a Tertiary Hospital in Tanzania. *Tanzania Medical Journal*, Vol. 36(1). Doi:10.4314/b3rdkf50.

Abstract

Background: Patients with chronic kidney disease (CKD) are at an increased risk of acquiring bloodstream infections (BSI), particularly during dialysis. Using catheters and other invasive devices can serve as potential sources of infection. Resistant bacteria isolated from CKD patients with BSI significantly contribute to higher morbidity and mortality rates among these patients compared to the general population. **Methodology**: A laboratory-based cross-sectional study was conducted to analyse blood samples collected from patients with CKD at Muhimbili National Hospital, Dar es Salaam, Tanzania. Two pairs of blood culture bottles were collected from each patient and incubated in the BACTEC™ FX 04 system. Positive blood cultures were then sub-cultured on solid media for isolation. Gram staining and conventional biochemical tests were performed for bacterial identification. Antimicrobial susceptibility testing was carried out using the Kirby-Bauer disc diffusion method. The patient's clinical data were obtained from their files. The Statistical Package for Social Sciences version 25 was used for data analysis. A p-value < 0.05 was considered statistically significant. **Results**: Two hundred participants with CKD receiving care at the nephrology and dialysis wards were enrolled. Most, 90/200 (45.0%), were adults aged 40-60, and males contributed 118/200 (59%). The prevalence of BSI among CKD patients was 75/200(37.5%). BSI was in 43/103 (41.7%) of participants receiving dialysis. Among the isolated bacteria, the Gram-negative bacteria were the predominant contributors, accounting for 43/75 (57.3%). The most frequent Gram-negative bacteria were *Pseudomonas aeruginosa* 13/43 (30.2%) and *Escherichia coli* 12/43 (27.9%). On the other hand, among the isolated Gram-positive bacteria, Coagulase negative staphylococcus (CoNS) was frequent, 23/32 (71.9%). Among the Gram-negative bacteria, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* demonstrated the highest resistance to ciprofloxacin, with rates of 75% and 90%, respectively. Meanwhile, *Escherichia coli* showed the highest resistance to ampicillin at 77%. Among Gram-positive bacteria, CoNS and *Staphylococcus aureus* exhibited the highest resistance to penicillin, with rates of 90% and 85.7%, respectively. **Conclusion**: The present study has revealed that a significant proportion of CKD patients have BSI, and the isolated bacteria were resistant to commonly used antibiotics in our settings. These findings underscore the need to address antibiotic resistance through enhanced antimicrobial stewardship in our setting.

212. Kamote, S., Tesha, N.A., Sunguya, B.F. (2025). Factors associated with adherence to antiretroviral therapy among HIV-positive adolescents and young adult patients attending HIV care and treatment clinic at Bombo Hospital in Tanga region-Tanzania. *PloS one*, Vol. 20(1). Doi: 10.1371/journal.pone.0316188.

Abstract

Background: Adherence to HIV treatment regimens involves the consistent and correct intake of all prescribed medications. The implementation of antiretroviral therapy (ART) program has significantly reduced mortality among adolescents living with HIV. However, adherence to ART is lower among adolescents compared to other sub-populations and even lower in sub-Saharan Africa. The factors influencing ART adherence are context-specific and vary across countries and regions. In the Tanzanian context, there is a paucity of data regarding these factors. **Methodology:** This cross-sectional study involved 385 adolescents and young adults living with HIV receiving treatment at Bombo Hospital Referral Hospital's Care and Treatment Clinic, in Tanga, Tanzania. To assess adherence, a one-month self-recall medication adherence scale was used while a structured questionnaire was used to gather data on determinants of adherence. Data were collected using Google Forms and subsequently exported as a Microsoft Excel file. The data were then entered into Stata software version 15 for cleaning for descriptive and logistic regression analyses. **Results:** More than a third (35.3%) of adolescents and young adults living with HIV in Tanga were not adherent to the effective and available ART. Adolescents and young adults living in households experiencing moderate food insecurity were 67% less likely to adhere to ART (95%CI 0.16–0.66) compared to those who were food secure. Those with secondary education were 2.3 times more likely to adhere to ART (95%CI 1.02–5.23), compared to those without formal education. While participants who consistently obtain their ART at the clinic were more 4.2 times more likely to adhere to medication (95%CI 1.29–13.72), those experiencing ART side effects were 39% less likely to adhere to ART (95%CI 0.38–0.98). **Conclusion**: More than one-third of adolescents and young adults were not adherent to ART in Tanga, Tanzania. Addressing such unprecedented challenges calls for efforts targeting adolescents and young adults with limited education, from households with food insecurity, and ensuring counseling and management of ART side effects.

213. Kapeleka, J.A., Ngowi, A.V., Mng'anya, S., *et al*… (2025). Assessment of unintentional acute pesticide poisoning (UAPP) amongst cotton farmers in Tanzania. *Toxics*, Vol. 13(4). Doi:10.3390/toxics13040300.

Abstract

Pesticide poisoning is widely accepted as a major public health problem in low- and middle-income countries, especially in East Africa. However, a very high proportion of unintentional poisonings are either unreported or misreported. To help fill this knowledge gap, we investigated the scale of unintentional acute pesticide poisoning (UAPP) in cotton-growing communities in Tanzania by conducting a cross-sectional survey of 1074 cotton farmers or farm workers. The findings from this study revealed a high incidence of self-reported negative health effects following occupational pesticide exposure, with 48% of respondents experiencing symptoms of UAPP within the previous

12 months. Furthermore, the substantial proportion of UAPP incidents were associated with a few highly hazardous pesticides (HHPs), particularly profenofos, lambda cyhalothrin, and co-formulations with both chlorpyrifos and cypermethrin. Of those reporting UAPP, only 6% sought medical treatment in a formal healthcare setting. The findings from this study clearly indicates an urgent need for improved pesticide regulation, the scale up of community surveillance, and the promotion of less hazardous alternatives to the use of HHPs. We provide policy recommendations and identify alternatives to HHPs for cotton pest management.

Keywords: *alternatives; chlorpyrifos; cotton farmers; cypermethrin; highly hazardous pesticides; lam doi.org/10.1186/s12978-025-02032-ybda cyhalothrin; personal protective equipment (PPE); pesticide exposure; profenofosords.*

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214. Katave, C., Jayaram, A., Ehsan, A.N., *et al*… (2025). The Availability of Paternity Leave in US Surgical Residencies: A Study of Program Websites. *Journal of Surgical Research,* Vol. 306. Doi: 10.1016/j.jss.2024.12.022.

Abstract

Introduction: As family dynamics evolve, an increasing number of male residents are embracing parenthood during their training. Consequently, paternity leave has emerged as a crucial consideration. This study aimed to determine the gap in public availability of paternity leave policies in surgical residency programs across the United States. **Methods:** We evaluated publicly available information regarding paternity leave policies across both program-specific and Graduate Medical Education (GME) websites of 1242 surgical residency programs across eight surgical specialties. This information was further evaluated in relation to program size, program director gender, specialty type, and geographic location using logistic regression models. **Results:** Paternity leave policies were found on only 4.3% of program-specific websites and 18.8% of GME websites. Neurosurgery had the greatest number of programs that publicly advertised their policies —11.7% on program-specific websites and 82.5% on GME websites. Vascular surgery and ear, nose, and throat surgery had no policies available on program-specific websites, and general surgery had the least paternity leave policies publicly available as per the GME websites (7.9%). Programs in the northeast were significantly less likely to have paternal leave policies publicly available (odds ratio: 0.55; 95% confidence interval: 0.31-0.96; P = 0.034), whereas programs in the west were significantly more likely (odds ratio: 2.1; 95% confidence interval: 1.2-3.67; P = 0.009) compared to the Midwest. **Conclusions:** This study highlights the pressing need for standardization and transparency across all surgical specialties regarding paternity leave policies. Addressing this gap is crucial for empowering applicants in family planning decisions and fostering a culture supportive of parental leave uptake.

Keywords: *Gender equity, Health policy**,** medical education, Parental leave policies, Residency program transparency, Surgery, Work-life balance.*

215. Kato, R., Joseph, R., Haule, L., *et al*… (2025). Readability of health research-informed consent forms: case of the National Health Research Ethics Committee in Tanzania. *BMC Medical Ethics,* Vol. 26(50). Doi:10.1186/s12910-025-01200-w.

Abstract

Background: Obtaining informed consent is the practice of respect for persons that gives the right to participants to make autonomous decisions about research participation. The difficult-to-read research-informed consent forms (RICFs) hinder comprehension and can expose participants to harm. This study aims to assess the readability of health RICFs for studies approved by the National Health Research Ethics Committee (NatHREC) in Tanzania. **Methods:** We used a retrospective cross-sectional study design. A total of 266 RICFs were sampled from the NatHREC database using stratified and systematic random sampling strategies. The readability of RICFs was assessed using the Flesch Reading Ease (FRE) and Flesch-Kincaid Readability Grade Level (FKRGL) formulas available in Microsoft Word and by manual check. Data were collected using the assessment checklist, analyzed, and presented with SPSS and MS Excel software. **Results:** Out of 266 RICFs assessed, 65.4% had the recommended page numbers, 81.6% had longer sentences, and 80.5% were difficult to read, necessitating a person to acquire a US grade 10 (Form Four educational level in Tanzania) to understand the presented information. Pearson's correlation coefficient with p-values of < 0.001 and 95% confidence level disclosed that sentence lengths in the RICFs had a statistical association with the difficult reading levels obtained. **Conclusion:** Findings from this study showed that most of the RICFs were concise in terms of page numbers and word count but had long and difficult sentences. Researchers should assess the readability of RICFs before submitting them for ethical approval. Research Ethics Committees (RECs) should consider inclusion of RICFs readability measurements in the Ethics Guidelines for Health Research. The study recommends further studies to assess the Kiswahili versions of RICFs to determine if the results obtained in this study apply to Kiswahili texts

216. Kavuraya, A.N., Mselle, T., Mpenda, F. N. (2025). The Genetic Diversity and Drug Resistance Patterns of HIV-1 Pol Gene in East Africa. Advances in Virology, Vol. (1). Doi:10.1155/av/2801818.

Abstract

Human immunodeficiency virus-1 (HIV-1) is among the most genetically diverse pathogens due to expeditious molecular evolution. The rapid change in HIV genomes intricates HIV transmission and progression and attributes HIV resistance to antiretroviral therapy (ART). In East Africa, as in other parts of the globe, HIV-1 occurs in various subtypes, circulating recombinant form (CRF) and unique recombinant forms, with subtype A1 being the most predominant. Surveillance of HIV-1 molecular diversity and drug resistance mutations (DRMs) is a linchpin for monitoring viral evolution and treatment efficiency. However, consolidated reports on the same are limited, and therefore, the pursuit of meta-analysis was sought to analyze genetic diversity and drug resistance patterns of HIV-1 pol gene and their geographical distributions in four East African countries (Kenya, Uganda, Tanzania, and Ethiopia). We retrieved 7614 HIV-1 pol gene sequences, deposited between 2015 and 2025 from the Los Alamos HIV databases. The predominant HIV-1

subtypes were A1 (40.2%), C (21.5%), and D (17.7%), with geographical variability. A notable frequency of inter-subtype recombinant was observed with recombinants A1D (9.5%) and A1C (2.94%) being prevalent. Few CRFs (> 0.1%) were identified. DRM were present in 42.8% of the sequences, with the majority associated with NNRTIs (36.5%) and NRTIs (25.5%). The most frequently associated mutations were K103N and M184V. Although resistance to INSTI (3.7%) remained minimal, its presence warrants continued monitoring. A significant association between HIV-1 subtypes and DRM prevalence was observed ($\chi^2 = 102.43$, $p < 0.0001$), with subtypes showing varied resistance burdens. These findings underscore the variability in HIV-1 genetic diversity across studied East African countries, highlighting the need for region-specific interventions to optimize HIV-1 control in this region.

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217. Kawonga, W.P., Livingstone, S.M., Ndaimani, A., *et al*… (2025). Exploring drivers and prevention strategies for sexual violence among adolescent girls and young women in Kicukiro, Rwanda. *Frontiers in Reproductive Health*, Vol. (7). Doi:10.3389/frph. 2025.1420947.

Abstract

Introduction: Sexual violence against adolescent girls and young women (AGYW) is a pervasive issue globally, with particularly high prevalence in sub-Saharan Africa. This study explores the drivers and prevention strategies for sexual violence among AGYW in Kicukiro, Rwanda**. Methods:** A descriptive exploratory design guided by the socioecological model and feminist standpoint theory was employed. In-depth interviews were conducted with 13 AGYW participating in a mentorship program and 5 male community members. Data was analyzed using thematic analysis to identify key drivers and potential prevention strategies**. Results:** Four themes emerged: (1) empowering mentorship programs, (2) tiered drivers of sexual violence, (3) optimizing violence-mitigating resources, and (4) interference with judicial processes. Key drivers of sexual violence included substance use, transactional sexual relationships, inadequate family protection, entrenched gender stereotypes, and limited legal literacy. **Conclusion:** Findings underscore the need for multifaceted interventions that address systemic and cultural barriers, strengthen legal frameworks, and expand community-based programs. Addressing sexual violence requires a holistic approach, integrating empowerment initiatives, robust community engagement, and legal reforms to create safer environments for AGYW. The mentorship program's success suggests scalability across other settings.

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218. Kayalioglu, H., Pateña, J., Sangeda, R.Z., *et al*… (2025). The importance of funding and investment to strengthen data science in Africa. *communications medicine,* Vol.5(293). Doi:10.1038/s43856-025-01001-7.

Abstract

Introduction: Data science (DS) plays a transformative role in advancing scientific discovery and informing policy by enabling the systematic analysis of large and complex data sets. In the health sector, it supports the development of predictive models, optimizes intervention strategies, and informs evidence-based decision-making, particularly in resource-constrained settings. Data

science can be used to develop tools for diagnosis, treatment, and prevention of diseases that disproportionately overburden Africa to improve health outcomes. Harnessing the full potential of data science (DS) capacity is challenging because there is a lack of financial investment in DS in Africa. There are compelling reasons to channel more resources into African DS infrastructure. An opportunity exists to intensify investments to train and retain data scientists in Africa, build and scale-up data science (DS) infrastructure, and coordinate efforts between governments to sustain DS initiatives. To achieve these outcomes, sustained funding and investment for DS is needed. This commentary discusses the critical role of DS in addressing health challenges in Africa, emphasizing the need for greater investment in DS infrastructure, talent development, and research funding. It highlights the shortage of DS professionals across the continent, and the limited financial resources allocated to DS. The article advocates for strategic investments through collaboration between governments, the private sector, and international partners, while exploring successful funding models and the necessity for improved infrastructure to support DS growth across Africa.

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219. Kelly, M. E., Msafiri, F., Averhoff, F., *et al*… (2025). Non-Influenza and Non-SARS-CoV-2 Viruses Among Patients with Severe Acute Respiratory Infections in Tanzania: A Post-COVID-19 Pandemic Snapshot. Viruses, Vol. 17(8). Doi:10.3390/v1708104.

Abstract

Respiratory pathogens are significant causes of morbidity and mortality worldwide. Since the emergence of SARS-CoV-2 in 2019 and the mitigation measures implemented to control the pandemic, other respiratory viruses' transmission and circulation patterns were substantially disrupted. We leveraged the influenza hospitalization surveillance in Tanzania to understand the distribution of respiratory viruses shortly after nonpharmaceutical interventions (NPIs) were lifted. A total of 475 samples that tested negative for SARS-CoV-2 and influenza from March through May 2022 were included in this study. The samples were tested for 16 virus targets using Anyplex II RV16 multiplex assays. The findings indicate that most hospitalizations (74%) were among children under 15 years, with human bocavirus (HBoV) being the most prevalent (26.8%), followed by rhinovirus (RV, 12.3%), parainfluenza viruses (PIVs1–4, 10.2%), respiratory syncytial virus (RSV, 8.7%), adenovirus (AdV, 4.3%), and metapneumovirus (MPV, 2.9%). Notably, 54% of respiratory hospitalizations had no viruses detected. The findings highlight the broad circulation of respiratory viruses shortly after NPIs were lifted in Tanzania. Surveillance for respiratory pathogens beyond influenza and SARS-CoV-2 can inform public health officials of emerging threats in the country and should be considered an important pandemic preparedness measure at a global level. **Keywords:** influenza; surveillance; post-COVID-19 pandemic; SARI; Tanzania.

220. Kengia, J.T., Kagoma, P., Kinyaga, A., *et al*... (2025). Awareness and usability of Community and Facility-based health sector Client Feedback mechanism in Tanzania Public Health System. A mixed method studies. *SSM-Health Systems*, Vol. 5. Doi: 10.1016/j.ssmhs.2025.100133.

Abstract

Background: Client feedback systems are increasingly becoming important in person-centered health care. The systems provide opportunities to the public to interact with the health care providers and policymakers, present their concerns related to the performance of the health care system in order to improve the quality, equity, and responsiveness in the provision of services, hence increase social accountability. This study aimed to assess the situation of client feedback systems in Tanzania, focusing on the awareness and usability of existing facility- and community-based feedback platforms from the client's perspective. **Methods:** The study employed a concurrent mixed-method design using both quantitative and qualitative methods. Quantitatively, surveys were administered in July 2023 to 1009 clients who received either inpatient or outpatient services from 109 health care facilities in 20 councils across 10 regions of Tanzania mainland to gather structured data on satisfaction levels, perceptions of feedback mechanisms, and suggestions for improvement. Qualitative data were collected through Focus group Discussion (FGD) to get in-depth healthcare workers and or clients' perspectives and experiences. These methods provided nuanced information, contextual insights, and a deeper understanding of the client feedback process. Combining these approaches yielded a comprehensive, multi-dimensional view of the client feedback mechanism landscape. We used Generalized Linear Mixed Model and thematic analysis for quantitative and qualitative data respectively. **Results:** Our findings revealed that, the majority of the clients were aware of their right to provide feedback (79.78 %), and in particular familiar with the suggestion box (82.95 %) followed by phone calls (34.49), nevertheless most of them never provided feedback (67.3 %). Phone calls (83.75) and SMS (44.10 %) were the most preferred platforms to provide feedback. Comparatively, clients attending higher level health facilities, clients who visited facilities 4–5 times or more, those who received services for 45–60 min or more and those who were aware of existence of client feedback system than their counterparts were significantly more likely to provide feedback. Moreover, in qualitative findings availability of real time feedback, authenticity, user-friendliness of the system, digitalization, clarity in referral pathway and information use to support decisions and quality improvement was important factors to enhance usability. **Conclusions:** Improving the usability of client feedback system is essential to attain person-centered health care and advance universal health coverage. The majority of the clients attending heath care facilities are aware of their right to provide feedback, nevertheless, most of them never provide feedback. Our study, have shed light on the need to invest on user friendly systems through co-creation and digitalization in order to improve client feedback systems in Tanzania. Moreover, the need to promote the use of available feedback systems and information generated to support decision making and quality improvement is critical for success

221. Khaki, J.J, Molenaar, J., Kark, J., *et al*… (2025). When health data go dark: The importance of the DHS Program and imagining its future. *BMC Medicine*, Vol. 23(241. Doi: 10.1186/s12916-025-04062-6.

Abstract

Background: The suspension and/or termination of many programs funded through the United States Agency for International Development (USAID) by the new US administration has severe short- and long-term negative impacts on the health of people worldwide. We draw attention to the termination of the Demographic and Health Surveys (DHS) Program, which includes nationally representative surveys of households, DHS, and Malaria Indicator Surveys (MIS]) and health facilities (Service Provision Assessments [SPA]) in over 90 low- and middle-income countries. USAID co-funding and provision of technical support for these surveys have been shut down. **Main body**: The impact of these disruptions will reverberate across local, regional, national, and global levels and severely impact the ability to understand the levels and changes in population health outcomes and behaviors. We highlight three key impacts on (1) ongoing data collection and data processing activities; (2) future data collection and consequent lack of population-level health indicators; and (3) access to existing data and lack of support for its use. **Conclusions:** We call for immediate action on multiple fronts. In the short term, universal access to existing data and survey materials should be restored, and surveys that were planned or in progress should be completed. In the long term, this crisis should serve as a tipping point for transforming these vital surveys. We call on national governments, regional organizations, and international partners to develop sustainable alternatives that preserve the principles (standardized questionnaires, backward compatibility, open access data with rigorous documentation) that made the DHS Program an invaluable global health resource.

222. Khamisi, R.H., Edward, T.S., Salim, M., Bokhary, Z.M. (2025). Outcomes of pull-through surgery among children with Hirschsprung's disease in Tanzania: a comparative study. *BMC surgery*, Vol. 26 (47). Doi: 10.1186/s12893-025-03369-8.

Abstract

Background: Surgical treatment of Hirschsprung disease (HD) has been performed through different techniques throughout the surgical history. All techniques evolve through a process of seeking optimal surgical outcomes. Our center has been using two main techniques to address the effects of Swenson and Rehbein's procedure. Reports are inconclusive regarding which technique provides optimal outcomes. **Objectives:** We aimed to review and compare outcomes between Swenson's and Rehbein's procedures in a sub-Saharan African cohort. **Methods:** We reviewed records of patients who underwent Pullthrough (PT) surgery at a tertiary hospital. The primary outcome of the study was bowel performance following surgery. Chi X2 and Fisher's exact tests were used. Logistic regression analysis was carried out to detect any associations among the outcomes. **Results:** Data from 55 patients were reviewed, and 49 were analyzed. These patients underwent surgery between January 1, 2018, and July 31, 2020. Thirty-one patients underwent the Swenson procedure. A total of 75% of the patients who underwent Swenson's procedure had good bowel performance after surgery, whereas only 33% of those who underwent the Rehbein's

procedure had good bowel performance (p = 0.01). The two procedures were comparable in terms of the amount of time needed. The complication rate was higher in Rehbein's procedure (77%, 14/19) than in Swenson's procedure (41%, 13/31). Constipation and residual aganglionotic segments were found mainly during Rehbein's procedure. **Conclusion and recommendation**: The Swenson pull-through technique demonstrated superior outcomes compared to the Rehbein procedure, with fewer postoperative complications and improved bowel function. These findings support the Swenson approach as the preferred surgical option in our setting. Nonetheless, prospective studies are recommended to validate these results and explore long-term functional outcomes.

223. Khassim, S.S., Andrea, L.C., Pius, E.C., et al... (2025). Assessment of Public Perception in the Use of Technology to Strengthen Good Governance in Dar es Salaam, Tanzania. Journal of Arts, Humanities and Social Science, Vol. 2(2).

Abstract

This study looks at how people in Dar es Salaam, Tanzania, feel about technology's role in improving governance, with a focus on transparency, citizen participation, and how services are delivered. We used a variety of methods to do this, including asking 384 public officials some questions and also doing some in-depth interviews. The results show that most people like mobile communication services and internet platforms for making governance more transparent (4.1/5) and getting citizens more involved (4.25/5). But there are also problems, like not enough people knowing how to use technology, and rules that stop people from using it. The results of the study match the Technology Acceptance Model (TAM), which says that how useful and easy something is to use is the most important thing in getting people to use technology in governance. Recommendations include digital literacy programs and changes to the rules to make the most of technology in governance.

224. Kibanga, W., Munishi, C., Ntissia, H., (2025), Vaccine handling practices and conformity to cold chain temperature requirements in selected regions of Tanzania: a descriptive cross-sectional study. *Journal of Pharmaceutical Policy and Practice,* Vol. 18(1). Doi:10.1080/20523211.2025.2479062.

Abstract

Background: Poor handling practices and infrastructures for vaccine management, especially in remote rural areas, pose a challenge to the accessibility of safe and efficacious vaccines. This study assessed vaccine handling practices and conformity to cold chain systems in Tanzania. **Methods:** A cross-sectional study was conducted from March 2022 to October 2022 using temperature loggers, checklists, and questionnaires adopted from the WHO Vaccine Management Assessment Tool. The study sites were 35 facilities in Dar es Salaam, Kigoma, and Mtwara regions in Tanzania. Data was analysed by the R statistical software. **Results:** A total of 89 vaccine handling personnel with 22 personnel of less than 30 years old, were included in this study. Seventy vaccine-handling personnel out of a total of 89 had adequate knowledge, and 63 participants had good vaccine-handling practices. Fifty-three participants had no prior training in vaccine handling. Most

(80%) of the facilities visited complied with the WHO cold chain storage standard of 2°C to 8°C in one month of observation; however, 29 facilities did not have temperature alarms to alert in cases of temperature changes and 24 facilities had no voltage regulators. **Conclusion:** In this study, most of the facilities studied were compliant with WHO vaccine storage temperature requirements over 30 days. However, significant gaps were identified, including inadequate infrastructure for emergency situations and a lack of prior training on vaccine handling among the majority of personnel.

Keywords: *Vaccines storage distribution practice Shandling.*

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225. Kibira, P.N., Tungu, M. (2025). Prevalence and factors associated with Helicobacter Pylori infection among patients with dyspeptic symptoms in Tanzania: Experience from Temeke regional referral hospital in Dar Es Salaam. *Plos One,* Vol. 20(4). Doi: 10.1371/journal.pone.0320191.

Abstract

Introduction: Helicobacter pylori is a type of bacteria that infects the stomach lining and can cause various gastrointestinal disorders, such as dyspepsia, gastritis and peptic ulcers. Dyspepsia is a common symptom among patients seeking medical care, and Helicobacter pylori infection is one of the most common causes of dyspepsia. **Objective:** This study aimed to determine the prevalence and factors associated with Helicobacter pylori infection among patients attending Temeke Regional Referral Hospital (RRH) in Dar es Salaam, Tanzania. **Methods:** A hospital-based cross-sectional study involving dyspeptic patients was conducted between May and June 2023. A Standardized data collection tool was used to collect socio-demographic characteristics and other information such as level of income and source of water. Helicobacter pylori antigen was detected using a stool Helicobacter pylori antigen rapid test according to the manufacturer's instructions. Data analysis was done using STATA 15 computer software. **Results:** The study revealed that the prevalence of Helicobacter pylori infection among dyspeptic patients was 43.77%. Also, male sex, occasional hand-washing habits and participants who were not sure whether they used treated water for drinking were the factors that were strongly associated with positive Helicobacter pylori infection. **Conclusion:** Preventive measures and eradication of Helicobacter pylori infection should be considered worthy by public health authorities. More studies have to be emphasized to check the relationship between sex and Helicobacter pylori infection.

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226. Kibwana, U.O., Manyahi, J., Sabas, D.M., *et al*… (2025). Ciprofloxacin Resistance in Community and Hospital-acquired Urinary Tract Infections: A Systematic Review and Meta-analysis from African Population. *BMC Infectious Diseases,* Vol. 26(212). Doi:10.1186/s12879-025-11546-6.

Abstract

Background: Since the introduction of fluorinated derivatives (fluoroquinolones) in the 1980s, these agents, especially ciprofloxacin, have become standard treatment for various bacterial infections, including urinary tract infections (UTIs). Frequently, in developing countries UTIs are treated empirically due to limited capacity of the culture and sensitivity testing in most health

facilities. Despite the high usage, there is a scarcity of data regarding ciprofloxacin resistance/susceptibility pattern among uropathogens isolated in Africa. This study aimed to conduct a systematic review to ascertain the rate of ciprofloxacin resistance among uropathogens in Africa and identify the most common fluoroquinolone-resistant uropathogens in the region. **Methods:** We used the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines to search the PubMed, Embase and Scopus databases, as well as grey literature search, for articles reporting on the antibiotic susceptibility of uropathogens in African countries between January 2010 and December 2023. **Results:** A total of 2940 articles were screened resulting to 44 relevant studies that were included, from three regions of Africa; East, West and North Africa. Majority of the studies were from East Africa (35/44; 79.5%) whilst North Africa contributed few numbers of studies (3/44; 6.8%). The overall rate of uropathogens resistant to ciprofloxacin in Africa was 34% (95%, CI = 0.27–0.40) which was from isolates obtained from various study populations, including the general population (24/44; 54.5%, pregnant women (8/44; 18.1%), children (7/44; 15.9%) and HIV infected individuals (5/44; 11.4%). Resistance to ciprofloxacin was high in North Africa (56%; 95% CI 0.27–0.85) compared to other African regions. Enterococci pathogens exhibited higher ciprofloxacin resistance, 47% (95% CI 0.21–0.75) compared to other bacteria isolates. **Conclusion:** This review has shown significant resistance of uropathies to ciprofloxacin, which is often the primary treatment for urinary tract infections in numerous African countries. Variability in resistance patterns among countries highlights the pressing requirement for coordinated surveillance throughout the region and emphasizes the importance of tailored interventions based on the local data. It is essential to conduct regular epidemiological monitoring of antibiotic resistance and establish effective infection control and antimicrobial stewardship programs in the African regions.

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227. Kidayi, P.L., Dausen, E.J., Ndile, M., *et al*... (2025). Development of a training programme to improve health literacy and respectful compassionate care competencies among undergraduate student nurses: a quantitative study. *BMC Medical Education*, Vol. *25*(1), 348. Doi:10.1186/s12909-025-06894-5.

Abstract

Background: Tanzania has embarked on health service developments advancing the quality of respectful and compassionate nursing care provision through training in health literacy and respectful and compassionate care. The undergraduate nursing program, while technically sound is inadequate in these areas. Through an EU + funded collaborative partnership between universities in Europe and Tanzania with associated training hospitals, modules in the topic areas were developed, implemented, and clinical learning environments assessed. The study aim was to ascertain the development of compassionate and respectful nursing care and health literacy competencies of undergraduate nursing students in Tanzania following completion of an education program. A secondary aim was to evaluate the suitability and capacity of the clinical learning environment to optimize the learning process for student nurses undertaking the program. **Methods:** A pragmatic approach was used, drawing on formative evaluation through the phased development and implementation of an education program for undergraduate student nurses using a pretest-posttest design. A questionnaire survey was undertaken with student nurses (n = 151) in

three Tanzanian universities before and after the education program was delivered. **Results:** Nursing students' knowledge, skills and attitudes related to Health Literacy all showed statistically significant improvement two weeks after the education program. For Respectful and Compassionate Care, no statistically significant difference was found. In the referral hospitals clinical learning environments, nursing students rated the overall subcategory "Satisfaction" at 41,6% on Strongly Agree/Agree. **Conclusions:** The development and implementation of an education program for undergraduate nursing students in Tanzania resulted in improved health literacy competencies. However, it did not produce the same outcome in competency development for respectful and compassionate care. Active inclusion and integration of respectful and compassionate care into the hospital setting with development of the learning environment can facilitate nurse's competency development. Supportive clinical learning environment boost students in their learning process.

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228. Kikula, A., Beňová, L., Molenaar, J., *et. al*… (2025). "We have theoretical knowledge, but these are not things we do regularly": District hospital's healthcare workers' experiences and perceptions on gestational diabetes mellitus screening in Tanzania. *PLOS Global Public Health*, Vol. 5(11). Doi: 10.1371/journal.pgph.0005373.

Abstract

Screening for gestational diabetes mellitus (GDM) during antenatal care (ANC) is crucial for maternal and fetal health. It offers an opportunity for prevention, timely diagnosis, and treatment of cardiometabolic complications during pregnancy and over women's and babies' life course. We aimed to describe GDM screening service provision during ANC in two hospitals in Tanzania, focusing on gaps and opportunities for improving GDM screening services in hospitals. We employed a case-study design, with seven rounds of structured observation, two focus group discussions, and eight semi-structured in-depth interviews with healthcare workers (HCWs) from two primary healthcare level hospitals between January and April 2024. Observation notes, interviews, and discussions were audio recorded, transcribed, and analyzed using qualitative content analysis. We present our findings using three categories to describe the GDM screening services: 1) no GDM screening services were provided - screening for GDM was not conducted according to any existing national guidelines. 2) Reasons for unavailability of GDM screening services - there was inadequate support for GDM screening services at the hospitals: no continuous learning opportunities for HCWs on GDM screening, a shortage of screening supplies, and the hospitals did not prioritize GDM screening services. 3) Opportunities for improving GDM screening services - the inclusion of GDM in the structural and administrative agenda of the hospitals was deemed important to provide quality screening for GDM. There was a discrepancy between guidelines and actual GDM screening services at the hospitals studied. To provide GDM screening services per the available national guidelines, HCWs should be trained and supported with supplies for providing GDM screening services.

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229. Kikula, A.I., Katalambula, L., Kagoma, P., et al… (2025). Using Research to Improve Reproductive, Maternal, Newborn, Child, and Adolescent Health services in Primary

Health Care in Tanzania: Highlights from the International Primary Health Care Conference. *The Pan African Medical Journal,* Vol. 52(2). Doi: 10.11604/pamj.supp.2025.52.1.46889.

Abstract

Introduction: In its pursuit of the global commitments outlined in the Sustainable Development Goals (SDGs), Tanzania has significantly improved its health sector. The primary health care (PHC) system, where the majority of Tanzanians receive care, has seen notable improvements in the infrastructure, financing, and human resources over the years. To highlight these improvements, the first international primary health care conference (iPHC) was inaugurated to share evidence from the PHC. This paper aims to document the extent and the type of research on Reproductive Maternal Neonatal Child and Adolescent Health (RMNCAH) from the first iPHC in 2024.**Methods:** we employed a desk review approach that involved a thorough analysis of abstracts submitted to the iPHC from 1st to 12th July 2024. We conducted descriptive content analysis of the 29 abstracts submitted and presented under the RMNCAH subtheme of the iPHC. **Results:** a total of 40 out of the 145 abstracts accepted for the iPHC were in the RMNCAH subtheme. From the 40 abstracts, 25 abstracts were used in the final analysis. Three categories were developed from the analysis: 1. Research on perinatal and preventive health care services, 2. Research on improving pediatric, adolescent, and youth health, and 3. Crosscutting improvements of RMNCAH in PHC services. **Conclusion:** research is conducted in the RMNCAH space within the PHC setting in Tanzania. While most research presented focused on antenatal care and delivery services, there is a need to encourage documenting the evidence through research and dissemination in other RMNCAH areas.

230. Kikula, A.I., Ramaiya, K., Sirili, N., *et al*… (2025). Hyperglycemia in pregnancy: A sensitivity analysis study of two recommended screening tests in Tanzania. *PLOS Global Public Health*, Vol. 5(10). Doi: 10.1371/journal.pgph.0004696.

Abstract

Screening for hyperglycaemia in pregnancy (HIP) is an entry point to a healthy pregnancy and childbirth for both the woman and child, and offers a window of opportunity for the prevention of cardio-metabolic complications over the life-course of the woman and newborn. In Tanzania, two different screening algorithms to identify women with HIP are recommended, with no clear understanding of which performs better. We aimed to determine the prevalence of hyperglycemia in pregnancy (HIP) among antenatal care (ANC) attendees and the accuracy of HIP screening tests. A cross-sectional study design involving 970 women attending ANC clinic was done in two district hospitals (Mbagala Rangi Tatu and Kisarawe) of Tanzania between June and October 2024. Socio-demographic, obstetric characteristics, and anthropometric parameters were obtained from study participants. A checklist screening test (CST) for gestational diabetes mellitus (GDM), defined by the Tanzanian standard treatment guideline, was used. We tested for glycosuria and two-hour 75-gram oral glucose tolerance test (OGTT) on every study participant. We conducted descriptive statistics and sensitivity analysis to determine the prevalence of HIP and assess the screening performance of CST and glycosuria test against OGTT using World Health Organization

2013 diagnostic criteria for GDM. The prevalence of HIP was 10% (7.9% GDM and 2.1% diabetes in pregnancy). Glycosuria test missed all women with GDM and could identify only 20% with diabetes in pregnancy. The CST had a sensitivity and specificity of 72.2% (62.1-80.8, 95%CI) and 32.4% (29.3-35.6, 95%CI), respectively, while the glycosuria test had 4.1% (1.1-10.2, 95%CI) and 97.1% (95.8-98.1, 95%CI). The area under the receiver operator characteristic curve for both the CST 0.523 (0.48-0.57,95%CI) and glycosuria test 0.506 (0.49-0.53,95%CI) was low, indicating their poor discriminatory performance for HIP. One in every ten women had HIP. The CST is a better first-step screening test than the glycosuria test based on sensitivity.

231. Kilgallen, J.A., Ishungisa, A.M., Charles, P., *et al*… (2025). "You are Married by the Woman": Divergent Understandings of Men's Support for Women's Empowerment in Northwestern Tanzania. *Men and Masculinities*, Vol.28(3). Doi:10.1177/1097184x251326192.

Abstract

Engaging men in women's empowerment is a global priority, yet there is still limited understanding of how men's support for women's empowerment is conceptualized across diverse demographic groups, particularly within communities undergoing change. This gap is especially critical in rural-urbanizing contexts, representative of many contemporary Global South settings, where individuals navigate tensions between respecting tradition while responding to novel social transformations. Using focus groups and interviews, this study examines how men's support for women's empowerment is conceptualized among young men, women, and elders in a fast-urbanizing Tanzanian community. Participants frequently noted supporting women's employment and opposing intimate partner violence as markers of support, yet broader understandings diverged significantly by age and gender. Younger participants voiced transformative notions of empowerment, challenging traditional norms, and advocating for women's empowerment in ways that disrupt age hierarchies, including educating elders. In contrast, elders framed support within boundaries that preserved male authority, while women prioritized practical forms of support over men's more abstract, rights-based rhetoric. A particularly striking finding was the disconnect between young men's vocal support for women's empowerment and their limited actions to enact such support in daily life. These generational and gendered differences reflect participants' varied priorities, exposures, and experiences, and offer insights into how gender roles are renegotiated in urbanizing communities.

232. Kilindimo, S., Turner, F., Musa, R., *et al*... (2025). Perceptions, availability and use of vasopressors for septic shock in emergency care settings in Tanzania. *African Journal of Emergency Medicine*, Vol.*15*(3). Doi: 10.1016/j.afjem.2025.05.003.

Abstract

Background: Sepsis carries a disproportionately high mortality in Sub-Saharan Africa. Current international guidelines for management of septic shock advocate for initial fluid resuscitation followed by vasopressors if there is ongoing concern for hypoperfusion. Emerging data suggest patients in sub-Saharan Africa who receives large fluid boluses may have increased mortality and

thus earlier initiation of vasopressors may have clinical benefit. Little data exists on the perceptions, availability and use of vasopressors in Tanzania, which may impact the feasibility of this strategy. We aimed to describe the perception, availability and use of vasopressor in Tanzanian emergency care settings, including its barriers. **Methods:** We conducted a cross-sectional web-based survey among clinicians and nurses from 19 different hospitals throughout Tanzania (national, zonal, regional and district hospitals). Collected data was kept by the principal investigator on a password encrypted computer whereby descriptive statistics were used to summarize the results. **Results:** Sixty-five healthcare providers completed the survey of whom the majority 53 (81.5 %), work in the emergency medicine department and 50 (76.9 %) reported treating at least one patient with septic shock per week. However, three quarters of respondents from district hospitals and nearly half of those from regional hospitals had access to vasopressors in <50 % of the time. The most common reported barriers to vasopressor use were lack of availability (50.8 %), and lack of comfort or knowledge (43.1 %). Overall, most respondents perceived that vasopressor use is generally safe and helpful for treating septic shock. **Conclusions:** Nearly all Tanzanian healthcare providers in emergency care settings reported that they had limited access to vasopressors to treat septic shock, as it was not consistently available. In addition to unavailability, lack of knowledge on vasopressor use was also reported as barrier. Our findings suggest that ensuring availability of vasopressors and education in the use thereof would improve sepsis care in Tanzanian hospitals.

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233. Kilipamwambu, A., Msirikale, I., Mukuria, B., *et. al*… (2025). Managing acute myeloid leukemia in the context of sickle cell anemia and suspected Fanconi anemia in Tanzania: a case report. *Journal of Medical Case Reports*, Vol. 20 (1). Doi: 10.1186/s13256-025-05458.

Abstract

Background: The transformation of Fanconi anemia into a hematological malignancy is consistent with the natural history of the disease. Few cases have been reported on acute myeloid leukemia, and even fewer cases involving coexistence with sickle cell anemia. Acute myeloid leukemia development is postulated to follow a multihit hypothesis where preleukaemic cells progress into leukemia through a second promotional mutation. Fever is a predominant clinical presentation, with blasts usually observed on peripheral blood smear and the immunophenotype confirmed with flow cytometry. In this case report from Tanzania, we present a case of acute myeloid leukemia with a failed induction in a patient with Sickle cell anemia and suspected Fanconi anemia. **Case presentation:** A 6-year-old Haya boy from northern Tanzania presented to Muhimbili National Hospital with a congenital malformation of the left hand, short stature, and multiple café-au-lait spots distributed over the trunk, face, and limbs. He had experienced recurrent fever for 8 months, accompanied by headache, weight loss, and abdominal distension. Laboratory evaluation confirmed acute myeloid leukemia and sickle cell anemia with clinically suspicious features of Fanconi anemia. The patient was initiated on institutional treatment for acute myeloid leukemia. He had a failed induction and subsequently transitioned to home-based palliative care after prognostic counseling with the family. Thereafter, he had several admissions, mostly for blood product support, and eventually died 7 months post-discharge. **Conclusion:** The onset of

acute myeloid leukemia in this case could be attributed to a malignant transformation from an underlying cancer predisposition syndrome. Our particular focus was on the leukemia treatment response where we observed a failed induction, prompting the need for alternative treatment approaches in this category of patients with acute myeloid leukemia in order to realize better treatment outcomes.

234. Killel, E., Mandara, F., Mwakalebela, F.S., *et al*… (2025). Prevalence and risk factors of stunting and thinness among school adolescents in Zanzibar Island: a school-based cross-sectional study. *Bulletin of the National Research Centre*, Vol. 49(1).

AbstracT

Background: Adolescent malnutrition, including stunting and thinness, has gained significant attention as a critical public health concern due to its implications for growth, development, and future well-being. However, there remains a gap in research regarding the specific risk factors contributing to stunting and thinness among adolescents in Zanzibar Island. **Objective:** This study aimed to assess the prevalence and risk factors for stunting and thinness among school-aged adolescents on Zanzibar Island, utilising data from the 2022 Zanzibar Island School Health and Nutrition Survey (ZSHNS). **Methods:** The study employed a cross-sectional design and conducted a secondary analysis of 1,772 records of adolescents aged 10–19 years obtained from the 2022 ZSHNS. Stunting was assessed using height-for-age Z-scores (HAZ < -2), while thinness was measured through BMI-for-age Z-scores (BAZ < -2). Logistic regression analysis was performed to identify risk factors associated with these conditions, with results stratified by variables such as age, sex, residence, and other relevant characteristics. All statistical analyses were carried out using STATA Version 18, and associations were expressed as odds ratios (OR) with 95% confidence intervals (CI). **Results:** The study identified a stunting prevalence of 11.8% and a thinness prevalence of 5.5%. Key risk factors for stunting included being in the younger age group (10–14 years) (AOR = 0.02, 95% CI: 0.01–0.05, P < 0.001), male gender (AOR = 1.98, 95% CI: 1.45–2.71, P < 0.001), anemia (AOR = 1.89, 95% CI: 1.40–2.65, P < 0.001), and living in rural areas. Thinness was associated with anemia (AOR = 2.52, 95% CI: 1.31–4.68, P = 0.004), middle-income households (AOR = 1.65, 95% CI: 1.13–2.43, P = 0.009), and residing in Kusini Unguja (AOR = 2.08, 95% CI: 1.01–4.33, P = 0.049) **Conclusion:** Stunting and thinness among adolescents in Zanzibar Island are significantly influenced by age, gender, anemia, household income, and regional disparities. The findings suggest that middle-income households and anemia are key contributors to thinness, while stunting is more prevalent among younger adolescents and males, with rural residence being an additional risk factor. These findings highlight the need for targeted and context-specific interventions that address both socio-demographic and health-related factors to effectively combat adolescent malnutrition in Zanzibar Island.

235. Kilume, U., Luoga, P., Nyangi, E, *et al*... (2025). "It is just that we are alive but we are suffering": experience of food insecurity among elderly in Morogoro, Tanzania a qualitative study. *Discover Public Health*, Vol. *22*(1)

Abstract

Background: A significant proportion of the elderly population in sub-Saharan Africa (SSA) is food insecure. Insufficient daily meal intake, quantity of food, and dietary monotony are among the defining characteristics of the elderly population in the region. However, there is limited documentation on elderly voices regarding their experience of the phenomenon in Tanzania. Therefore, this study aimed to explore the experience of food insecurity among elderly people (identified as poor elderly) aged 60 years in Morogoro. **Methods and tools**: We adopted an exploratory case study design employing in-depth interviews (IDI) guide and a Focused Group Discussions (FGD) guide to explore the experience of food insecurity among the elderly population and identify the underlying circumstances. A purposive sampling procedure was used to select study participants for in-depth interviews and focused group discussion (FGD). A total of 25 elderly and 3 district officials were involved in in-depth interviews, and another 25 elderly people were involved in focused group discussions. A thematic analysis adopting both inductive and deductive approaches was used to analyse the collected data and findings are presented in forms of themes and subthemes. **Results**: The study found that the elderly had experience of having limited access to food and ate a smaller number of meals as well as insufficient amounts. The circumstances underlying food insecurity among the elderly population were found to be limited strength to engage themselves in farm activities or work as casual labour to earn some money to buy food, limited strength to prepare food, the burden of taking care of grandchildren, and inadequate food support from children. **Conclusion:** This study has demonstrated that elderly people experience food insecurity with respect to both quantity and quality. Therefore, it is high time that the government develops a strategy to ensure that all elderly have assurance of food all over the country.

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236. Kilungo, A., Chukwuonye, G.S., Okpanachi, V., *et al*… (2025). Assessing Sub-Saharan Africa's readiness to address the impact of climate change and health: A scoping review. *PloS one*, Vol. 20(11). Doi: 10.1371/journal.pone.0315482.

Abstract

Climate change severely threatens global public health, with sub-Saharan Africa (SSA) projected to experience profound impacts. This scoping review aimed to provide a comprehensive overview of current research on climate change and its health implications in SSA while identifying research gaps and outlining the necessary resources and policy interventions to strengthen public health resilience in the region. Literature was retrieved from four databases (PubMed, Scopus, Embase and Web of Science) using the keywords "climate change," "health," and "sub-Saharan Africa" and this study was conducted using the PRISMA framework. The inclusion criteria were peer-reviewed studies published in English between January 1, 2001, and August 1, 2024, that examined the effects of climate change in SSA, assessed its impacts on health outcomes, A total of 7851 journal articles were identified from the initial search, and after screening, 153 studies were included for review. The included studies were published between January 2001 and August 2024. Although extensive studies have been conducted on extreme heat (71 studies), drought (45 studies), extreme precipitation events (52 studies), and flooding (34 studies), important themes such as air quality (10 studies), chemical water quality (8 studies) and natural disasters (8 studies)

have been understudied. Additionally, this scoping review revealed a geographical gap in climate change and health studies, as only 24 out of 53 countries in sub-Saharan Africa were represented. The key deficiencies identified include limited funding, technological constraints, inadequate climate policies, and a lack of community-focused adaptation plans. Moreover, this review highlights the urgent need for resilient healthcare systems capable of addressing climate-related health risks effectively. Addressing these gaps is essential for developing targeted strategies to mitigate climate change's health impacts and increase resilience in SSA communities. This review aims to inform policymakers, researchers, and stakeholders about critical areas requiring attention and investment by enhancing our understanding of these challenges and gaps. Strengthening research capacities, fostering collaboration, and implementing evidence-based policies are imperative steps toward achieving sustainable health outcomes in the face of a changing

237. Kilusungu, Z.H., Kimera, Z.I., Nandolo, W., *et al*… (2025). Knowledge, attitudes and practices related to antimicrobial use and resistance among fish farmers in Dar es Salaam, Tanzania. *PLoS One,* Vol. *20*(11). Doi: 10.1371/journal.pone.0335862.

Abstract

This study was conducted in Dar es Salaam, Tanzania, the major commercial city of Tanzania, to assess the knowledge, attitudes, and practices (KAP) of fish farmers on antimicrobial use (AMU) in aquaculture. This was a cross-sectional study conducted between March and June 2023, involving total of 60 fish farmers. Data were collected electronically using the Afya-Data application and analyses with SPSS Version 26.0. The findings showed that most farmers were male (71.7%), over 50 years of age (51.7%), and college-educated (38.3%). However, 80% had not received formal aquaculture training, and 50% lacked access to aquaculture extension services. While 80% of the respondents were aware of antibiotics and 93% were familiar with antimicrobial resistance (AMR), only 35% demonstrated a positive attitude towards the use of antimicrobial agents. Although no farmer reported direct antibiotic use, potentially risky practices were noted. These included the use of treated manure for pond fertilization in 38.3% of farms and irregular pond drainage into the environment practices that can contribute to the spread of AMR beyond aquaculture settings. To address these gaps, we recommend strengthening aquaculture extension services with a focus on improved pond management practices, establishing a functional fish disease surveillance system, and enhancing collaborative research among government, academic, and research institutions. The Department of Aquaculture Extension should develop cost-effective farmer-to-farmer extension models. To improve access to information, we also propose forming small cooperative groups under the Aquaculture Association of Tanzania (AAT). Moreover, the Ministry of Livestock and Fisheries (MLF) should develop and implement clear guidelines for monitoring AMU, AMR, and fish diseases, both existing and emerging.

238. Kim, S.S., Codi, A., Platts-Mills, J.A., *et al*... (2025). Personalized azithromycin treatment rules for children with watery diarrhea using machine learning. *Nature communications*, Vol. 16(1). Doi:10.1038/s41467-025-60682-9.

Abstract

We use machine learning to identify innovative strategies to target azithromycin to the children with watery diarrhea who are most likely to benefit. Using data from a randomized trial of azithromycin for watery diarrhea (NCT03130114), we develop personalized treatment rules given sets of diagnostic, child, and clinical characteristics, employing a robust ensemble machine learning-based procedure. This procedure estimates the child-level expected benefit for a given set of covariates by combining predictions from a library of statistical models. For each rule, we estimate the proportion treated under the rule and the average benefits of treatment. Among 6692 children, treatment under the most comprehensive rule is recommended on average for one third of children. The risk of diarrhea on day 3 is 10.1% lower (95% CI: 5.4, 14.9) with azithromycin compared to placebo among children recommended for treatment (NNT: 10). For day 90 re-hospitalization and death, risk is 2.4% lower (95% CI: 0.6, 4.1; NNT: 42). While pathogen diagnostics are strong determinants of azithromycin effects on diarrhea duration, host characteristics may better predict benefits for re-hospitalization or death. This suggests that targeting antibiotic treatment for severe outcomes among children with watery diarrhea may be possible without access to pathogen diagnostics.

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239. Kimambo, A., Vuhahula, E., Mmbaga, E., *et al*... (2025). 1803 Barriers and Facilitators for Implementing Ultrasound Guided Fine Needle Aspiration and Rapid On-Site Evaluation in a Resource-Limited Setting. *Laboratory Investigation*, Vol. 105(3)

Abstract

Background: Fine-needle aspiration (FNA) is an inexpensive and often the primary diagnostic procedure in low and middle-income countries (LMICs). FNA is highly accurate when performed by skilled individuals using image guidance and rapid on-site evaluation (ROSE), but false negative rates can be high when performed without adequate training. Core biopsies are expensive, and access to biopsy needles can be challenging in LMICs. We therefore evaluated barriers and facilitators to implementing ultrasound-guided FNA (USFNA) and ROSE at a pathology department in a national referral hospital in Tanzania. **Design:** We conducted a situational analysis using qualitative methods. Semi-structured interviews were conducted in person with multiple key stakeholders involved in cancer care, including pathologists, surgeons, intervention radiologists, laboratory scientists, and administrators. Prompts included questions about barriers and facilitators to implementing USFNA and ROSE. The interviews were recorded, transcribed, translated, and coded using thematic context analysis, and major themes were identified. **Results:** We interviewed 11 pathologists, 6 surgeons, 3 interventional radiologists, and 3 laboratory scientists. The findings are summarized in Table 1. Major barriers identified include inadequate pathology capacity and infrastructure, the lack of standardized training for cytopathology, a likely increase in procedure time, a need to establish a new patient referral pathway, and the potential increase in cost of the procedure. Facilitators include access to multi-institutional North-South partnerships that can help obtain funding or provide subspeciality training, the existence of an institutional pathology-radiology partnership, the availability of certain training programs, and an institutional tension for change. Suggestions for how to overcome the barriers include providing systematic training in cytopathology, establishing an integrated patient referral pathway, appointing an intervention

champion, strengthening pathology capacity and quality management systems, and modifying the diagnostic FNA payment structure.

240. Kimambo, A., Vuhahula, E., Ng, D. (2025). Perceived readiness for practice of current and former anatomic pathology residents in Tanzania. *Academic Pathology,* Vol. 12(4). Doi: 10.1016/j.acpath.2025.100217.

Abstract

One of the proposed primary barriers to high-quality pathology services in Sub-Saharan Africa has been the variability in pathology training. In this study, we evaluated the perceived readiness for practice of current and former anatomic pathology residents at Muhimbili University of Health and Allied Sciences in Tanzania. An online survey evaluating perceived readiness in the ability to perform core professional competencies in anatomic pathology was distributed to previous and current Muhimbili University of Health and Allied Sciences pathology residents. The survey had 30 of 45 (67%) respondents, which included current and former residents. More than 95% of participants either strongly agreed or agreed that the Muhimbili University of Health and Allied Sciences training program prepared them to perform grossing, surgical pathology report writing, fine-needle aspiration, and effective interdisciplinary consultation. Fewer participants were confident in activities related to laboratory management. The program's major strength was the exposure to a large number of cases, while weaknesses included a small number of faculty, insufficient mentorship, and limited infrastructure. Current and former trainees of the Muhimbili University of Health and Allied Sciences pathology residency program overall felt that their training prepared them for independent clinical practice. Additional training in laboratory management should be considered.

241. Kimario, M.S., Ambikile, J. S., Iseselo, M. K. (2025). Factors associated with knowledge and practice regarding oxygen administration: A cross-sectional study among registered nurses working in wards and ICUs at Muhimbili National Hospital in Dar es Salaam, Tanzania. *PloS one*, Vol. 20(1). Doi: 10.1371/journal.pone.0317620.

Abstract

Background: Oxygen is a vital therapy approved by WHO, crucial for critically ill patients as a supplemental treatment. Nurses' pivotal role in oxygen administration is poorly understood. This study aimed to assess factors associated with oxygen administration to critically ill patients among nurses at Muhimbili National Hospital (MNH) in Dar es Salaam, Tanzania. **Methods:** A descriptive cross-sectional study was conducted among 208 nurses using a simple random technique to recruit respondents. Data were collected in May 2022 via a self-administered questionnaire, designed and tested by the authors. Mean knowledge and practice scores were used to categorize knowledge and practice as high or low respectively. The Chi-square test and multiple logistic regression analyses were performed to evaluate factors associated with knowledge and practice regarding oxygen administration. Statistical significance was determined at a *p*-value less than 0.05. **Results:** Of the 208 respondents, 96(46.2%) and 78(37.5%) had low knowledge and low practices regarding oxygen administration, respectively. Receiving in-service training on oxygen

administration (AOR: 3.515; $p<0.001$) was positively associated with knowledge of oxygen administration. None of the factors showed a statistically significant association with the practice of oxygen administration. **Conclusion:** A substantial proportion of nurses had inadequate knowledge and practices regarding oxygen administration. While none of the assessed factors were found to have a statistical association with practice on oxygen administration, it is important to note their clinical significance. Healthcare institutions can benefit from implementing regular in-service training programs to address these knowledge and skills gaps and ensure that nurses are well-prepared for proper oxygen administration. Additionally, ongoing monitoring and support are essential to help translate improved knowledge into effective clinical practices.

242. Kimario, O.M., Ali, F.H., Nzelu, P., *et al*... (2025). Prevalence of early postoperative complications and associated factors among children who underwent adenotonsillectomy at Bugando Medical Centre, Mwanza, Tanzania. *World Scientific Research*, Vol. 12(1).

Abstract

Background: Tonsillar infections and sleep-disordered breathing (SDB) are the leading indications for performing adenotonsillectomy. Studies have shown that the majority of complications happen during the first eight hours after the procedure. Despite this procedure being frequently performed, there are no studies reporting the prevalence of early postoperative complications and associated factors following adenotonsillectomy at Bugando Medical Centre. The study will enlighten us about the complications, which in future protocols will be made to minimize the complications. It is a descriptive cross-sectional study conducted at Bugando Medical Centre from November 2023 to July 2024. The total number of study participants was 206. The majority were male (56.3%). The leading age group that was mostly affected was from 3 years to 8 years, accounting for 67.5%. The prevalence of early postoperative complications was 7.77%. Primary hemorrhage was the leading complication, followed by infection. There is significance in the pre-existing medical conditions and early postoperative complications, as shown in the study. Additionally, this study also showed that age and gender have no relationship in the development of early complications.

243. Kimaro, E., John, J., Damiano, P., *et al*... (2025). Impact of insulin storage and syringe reuse on insulin sterility in diabetes mellitus patients in Mwanza Tanzania. *Scientific Reports*, Vol. 15(1). Doi:10.1038/s41598-025-91029-5.

Abstract

This study evaluated microbial contamination in insulin products used by diabetic patients in Mwanza, Tanzania, focusing on syringe reuse and improper storage practices, such as using clay pots or charcoal and water buckets. Conducted in 2024, this cross-sectional, laboratory-based study collected 81 insulin vials from 51 diabetic patients at Bugando Medical Centre through appointments and home visits. The insulin samples were cultured for microbial growth, and bacteria were identified using in-house biochemical tests. The median age of the patients was 50 [IQR: 25–64] years; half had diabetes mellitus for six years and used insulin for five years. Half were male, 52% had primary education, and 49% stored insulin in clay pots. Out of 81 insulin

samples collected from diabetic patients, 5 (6.2%) showed microbial contamination, mainly due to Gram-positive bacteria. Contaminated products included Humulin R, Humulin N, and Biosulin 30/70. Storage in clay pots had higher contamination (16%) than storage in refrigerators (0%). Improper storage practices, such as immersing vials in water or a mixture of water and sand within clay pots expose insulin to microbial contamination, which increases the risk of infections. To ensure safety and effectiveness patients should be educated to follow the manufacturer's storage guidelines.

244. Kimaro, E., Konje, E.T., Kidenya, B.R., *et al*… (2025). Quality of insulin obtained from hospital and community pharmacies in Mwanza, Tanzania: A cross-sectional study. *PlosResearch One*, Vol. *20*(6). Doi: 10.1371/journal.pone.032536.

Abstract

Background: Insulin, a peptide hormone crucial for diabetes management, necessitates strict storage (2-8 °C) to maintain concentration, as per regulatory guidelines (e.g., USP, WHO). Degradation can occur during the manufacturing process, transportation, or storage, via heat-induced denaturation and aggregation, compromising its efficacy. In Sub-Saharan Africa, including Tanzania, weak regulatory oversight of imported medicines may compromise insulin quality. Varied findings from existing studies underline the need for local quality assessments. **Methods:** This cross-sectional study, conducted from April to July 2024 in Mwanza, Tanzania, evaluated the quality of insulin from eight pharmacies. A convenience sampling approach was employed, with insulin samples purchased as a simulated patient to reflect real-world acquisition. 15 samples, representing seven distinct insulin brands, were collected. High-Performance Liquid Chromatography (HPLC) was utilized to quantify insulin concentration. Additionally, samples were assessed for visual appearance, packaging, labeling, and storage conditions following established pharmacopoeial and quality control standards. **Results:** Out of 15 insulin samples, two samples (13.3%) failed to meet the official USP monograph during the assay test. The remaining 13 samples (86.7%) complied with USP standards. **Conclusion:** These findings underline significant challenges in ensuring the quality of insulin products. While most samples adhered to USP standards, the issues observed highlight the need for improved quality control measures and robust cold chain management to guarantee the efficacy and reliability of insulin for diabetic patients.

245. Kimaro, E., Konje, E.T., Mori, A. T., *et al*…(2025). Investigating Real-World Stability and Sterility of in-Use Insulin-An Urgent Public Health Concern. In Sub-Saharan Africa. *Diabetes, Metabolic Syndrome and Obesity*, Vol. 18. Doi:10.2147/DMSO.S54677.

Abstract

Insulin stability is a critical yet underexplored factor affecting diabetes outcomes in Sub-Saharan Africa (SSA). High ambient temperatures, unreliable refrigeration, and weak regulatory oversight may compromise insulin quality during storage and use. Patients often rely on traditional, non-validated methods that risk potency loss. This commentary highlights the urgent need for real-world studies on insulin stability and sterility in SSA to inform evidence-based practices and improve glycemic control among diabetic patients in resource-limited settings.

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246. Kimaryo, C., Efraim, J., Njenge, N., *et al*... (2025). The triple burden of malnutrition among adolescents in Dar es Salaam, Tanzania: The role of gender, household environment, and food insecurity. *PLoS One*, Vol. *20*(*12*). Doi: 10.1371/journal.pone.0337102.

Abstract

Background: Adolescence is a critical growth period with increased nutritional needs that can put adolescents at risk for the triple burden of malnutrition, which can impair brain development, reduce functional capacity, and heighten the risk of non-communicable diseases. Despite this, there is limited data on factors associated with adolescent malnutrition in Dar es Salaam. This study aimed to determine the prevalence and associated factors for anemia, stunting, underweight and overweight/obesity among adolescents in Dar es Salaam. **Methods:** A cross-sectional study was conducted among 507 adolescents aged 12–19 in Dar es Salaam, using multistage cluster sampling. Data was collected using a pre-validated structured questionnaire through an Open Data Kit, while anthropometric measurements were measured using a digital weighing scale and stadiometer. Hemocue machines were utilised to measure anaemia through capillary blood samples. Data analysis, including descriptive statistics and modified Poisson regression, was performed using Stata v18 to identify factors associated with malnutrition. **Results:** Overweight affected 16%, anaemia 39%, stunting 23% and thinness 12% of all adolescents. Food insecurity affected 69% of the households and was associated with a lower overweight risk (Crude Prevalence Ratio (CPR) 0.51, 95% CI: 0.34–0.75, p = 0.001) and a higher risk for thinness (CPR 2.10, 95% CI: 1.13, 3.91, p = 0.019). After controlling for other explanatory variables, adolescents from households with unimproved toilet facilities had a higher risk of anaemia (APR 1.51, 95% CI: 1.16–1.95, p = 0.002). Girls had a lower risk of stunting (APR 0.63, 95%, CI: 0.45–0.88, p = 0.006) and thinness (APR 0.29, 95%, CI: 0.16–0.54, p < 0.001) but a higher risk for overweight (APR 2.62, 95%, CI: 1.56–4.43, p < 0.001) compared to boys. **Conclusion:** Adolescents in Dar es Salaam experience high rates of malnutrition. Food insecurity, poor sanitation, and gender-specific factors contribute significantly to these outcomes. Integrated interventions are essential to address these interlinked determinants of malnutrition in this vulnerable group.

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247. Kimboy, F., Mlunde, L.B.M., Philipo, E.G., *et al*… (2025). Awareness is associated with the practice of routine medical examination among market food handlers in Dar es Salaam, Tanzania. *Journal of Food Safety and Hygiene*, Vol. 10(4). Doi: 10.18502/jfsh. v10i4.19395.

Abstract

Most foodborne diseases (FBDs) result from unhygienic and unsafe food-handling practices among food handlers. Routine medical examination (RME) is one of the recommended methods for preventing FBDs. This study aimed to determine awareness, practice, and factors associated with RME practice among market food handlers. In 2022, a community-based cross-sectional study was conducted among 232 food handlers in the market in Dar es Salaam, Tanzania. A questionnaire was used to collect information on social-demographic, awareness, and practice of RME among food handlers. Of 232 study participants, 202 (87.1%) were female, and 128 (55.2%) were married. Food handling was the primary occupation for most participants (218; 94.0%), and 112 (48.3%) had less than 5 years of working experience. The majority of participants, 211 (90.9%) and 192 (82.8%), knew about FBDs and RME, respectively. The overall awareness of RME services was 162(69.8%), and 168 (72.8%) had ever undergone RME. Duration of work as a food handler (AOR=3.9, 95% CI=1.120-13.493), participation in food hygiene training (AOR=4, 95% CI=1.501-10.618), and awareness of RME services (AOR=21, 95% CI=8.454-52.246) were factors associated with good RME practice. Food handlers showed good awareness of FBDs and satisfactory knowledge and practices on RME. Adherence to RME was influenced by work experience, hygiene training, and awareness of RME services. Findings should be interpreted cautiously, as the tool used was not validated for the Tanzanian context. We recommend local validation of the tool and qualitative studies to explore barriers and facilitators of RME among food handlers.

Keywords: *Awareness; Foodborne diseases; Food handlers; Practice; Routine medical examination.*

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248. Kimera, Z.I., Shimo, P., Balandya, E.C., *et al*... (2025). Survey on human-designated antiretroviral (ARV) drug residues in broiler chicken, domestic pigs, and animal feeds in, Tanzania. *Bulletin of the National Research Centre, 49*(1). Doi:10.1186/s42269-025-01314-6.

Abstract

Background; Recent reports have indicated the use of antiretroviral (ARV) drugs in animal production in neighboring Uganda, with further reports of use in several African countries. This cross-sectional survey was conducted in nine districts in Tanzania and involved screening for the presence of three first-line ARVs (lamivudine, nevirapine, and efavirenz) residues in the muscle and blood of domestic pigs and broiler chickens and in sampled animal feed and water. Residues were determined using liquid chromatography and mass spectrometry (LC–MS/MS). The method involved calibration of the lower limit of quantitation (LLOQ) and limit of detection (LOD). ARVs were detected and quantified using the multiple reaction monitoring (MRM) system. **Results:** 131 (66.8%) of the 196 samples of muscle, blood, and animal feed were found to contain lamivudine residues, with the highest concentration detected in domestic pig blood and muscle (7.58 mg/kg) and the lowest concentration (0.01 mg/kg) in broiler chicken feed. There was a significant relationship between the presence of lamivudine by sample type and sample origin ($p = 0.000$). Nevirapine and efavirenz drugs were not detected in any of the collected samples. No ARV residues were detected in water samples ($n = 37$). **Conclusions:** This survey confirms the use of

ARVs in animal production in Tanzania as evidenced by the presence of residues in animal feeds. We found lamivudine residues in domestic pigs and broiler chickens at concentrations higher than those recently reported in other East African studies. Farmers living with HIV may be using ARVs from their prescribed medication, which may lead to poor adherence and the emergence of drug resistance. Besides direct human and animal health issues, these residues in animal feeds and animal excreta can lead to environmental contamination leading to several negative impacts. We recommend a total ban on human-designated ARVs in animal production and advocate for comprehensive studies and monitoring systems across African countries to reveal potential societal and other reasons for their use and provide comprehensive solutions using One Health approaches.

249. Kiondo, F., Metta, E., Mmbaga, E.J., *et al*... (2025). Retention in HIV Pre-Exposure Prophylaxis Among Men Who Have Sex with Men in Tanga, Tanzania. *HIV/AIDS-Research and Palliative Care*, 185-194. Doi:10.2147/hiv. s52711.

Abstract

Purpose: Men who have sex with men are at high risk of Human immunodeficiency virus (HIV) infection and bear the highest burden of the disease in Tanzania. Although pre-exposure prophylaxis (PrEP) has demonstrated high efficacy in the prevention of HIV infection in clinical trials, challenges with retention threaten its effectiveness. Therefore, we assessed the extent and predictors of retention in PrEP care among men who have sex with men in Tanga, Tanzania.

250. Kiroga, N. J., Khanbhai, K. S., Amani, D., *et al*... (2025). Thrombolysis as part of acute ST-segment elevation myocardial infarction (STEMI) care: experience from the STEMI network in Tanzania. *Cureus*, Vol. *17*(6). Doi:10.7759/cureus.86337.

Abstract

Background and objective: The burden of ischemic heart disease (IHD) in low- and middle-income countries (LMIC) is increasing worldwide. A significant proportion of hospitalizations and deaths have been attributed to this condition. Promoting good clinical outcomes in patients with IHD requires timely diagnosis and management using percutaneous coronary intervention (PCI) and recommended pharmacotherapy. Fibrinolytics, combined with antiplatelet and anticoagulant agents, are recommended as initial therapy in resource-limited settings. The regional systems, which aim to provide access to timely percutaneous intervention for patients with STelevation myocardial infarction (STEMI), are still in their infancy stages in Tanzania. However, these systems have shown promising results in coordinated patient management. This survey was conducted through a network to gain an understanding of the general context of IHD management. This study aimed to assess the current service availability, infrastructure in place, and the duration of time taken between various referral centers in different zones. **Methodology:** An online cross-sectional survey was conducted between May and June 2023, involving medical practitioners from facilities in mainland Tanzania and Zanzibar. Physicians from various regional centers were invited to complete an anonymous online survey about the available STEMI services and their familiarity with the pathway. Information on geography, available expertise, equipment, and medicines at these facilities was collected and analyzed using R software, version 4.3.1. Proportion

and frequencies were the primary measures for assessing the capacity and distribution of these facilities. A chi-square test was used to compare these parameters between public and private facilities, with the significance level set at p0.05. All ethical standards were adhered to, and approval was obtained from the ethics committee. **Results:** Among the 66 clinicians from mainland Tanzania and Zanzibar, 36 (54.5%) worked in public facilities, while 30 (45.5%) worked in private facilities. Clinician responses from the coastal regions were obtained from 18 (50%) public facilities and 10 (33%) private facilities, indicating an uneven distribution of thrombolysis and primary angioplasty services in this region. Only a quarter (n=9, 25%) of clinicians from the public and less than half (n=14, 47%) of the clinicians from private facilities reported the availability of thrombolytic medications in their facilities. Moreover, 11 (31%) and seven (23%) clinicians from private and public facilities, respectively, could refer patients for advanced care within the recommended 90 minutes after initial medical contact. Primary angioplasty services were concentrated in the coastal and central regions of the country, with four catheterization laboratories in the Dar es Salaam region (coastal) and one in the Dodoma Region (central). **Conclusions**: Facilities offering medical services to patients with myocardial infarction (MI) are unevenly distributed in Tanzania, with a concentration mainly in the coastal region. These facilities have established protocols to care for patients with STEMI. The capacity of facilities is generally low and varies between public and private facilities. Further research is necessary to inform policies, and deliberate strategies and efforts are required to address the prevailing situation.

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251. Kisaka, J.M., Kyaruzi, V.M., Ngotta, V., *et. al*... (2025). A five-year experience of anorectal malformation surgical reconstrunctions and functional outcome associated factors in Eastern Africa. *BMC Pediatrics*, Vol. 25(1). Doi:10.1186/s12887-025-05560-5.

Abstract

Background: Functional outcomes after definitive surgical reconstruction in the management of Anorectal malformations (ARM) patients have not been adequately studied in the third-world countries. **Objective:** This retrospective cross sectional analytical study aimed at evaluating the functional outcome and attributable factors following the definitive reconstruction surgery among children with ARM at Muhimbili National Hospital. **Methods:** Patients with ARM who underwent definitive reconstruction surgery between 2017 and 2021 were recruited in the current study using the consecutive sampling method. The functional outcome and severity were assessed using the modified Krickenbeck scoring system. Analysis was performed using STATA version 16.0. **Results:** 116 pediatric patients with ARM who underwent definitive surgical repair were reviewed, the mean age was 4.4 (SD1.8) years. The male-to-female ratio was 1.1:1. The functional outcome was voluntary bowel movement (VBM), constipation, and soiling with a prevalence of 63%, 22%, and 15% of patients respectively. Babies born preterm shows significant association with constipation with P- the value of 0.003, OR 13.26, and 95% CI 2.48–70.87. Abdominal perineal pull-through among patients who had High ARM showed a significant association with soiling (*P*-value 0.001, OR 0.03, and 95% CI of 0.01–0.16). **Conclusion:** In the current study we identified that there is no significant variation in ARM functional outcome between males and females. However, some factors such as the type of surgery, patient body weight and the

complexity of anorectal malformation were all decisive factors for achieving the optimum Voluntary Bowel Bovement (VBM) following ARM repair surgery.

252. Kisambale, A. J., Pereus, D., Mandai, S. S., *et al*... (2025). Genetic diversity of Plasmodium falciparum reticulocyte binding protein homologue-5, which is a potential malaria vaccine candidate: baseline data from areas of varying malaria endemicity in Mainland Tanzania. *Malaria journal*, Volo. 24(1). Doi:10.1186/s12936-025-05269-x.

Abstract

Background: The limited efficacy of the two recently approved malaria vaccines, RTS, S/AS01 and R21/Matrix- M™, highlights the need for alternative vaccine candidate genes. Plasmodium falciparum Reticulocyte Binding Protein Homologue 5 (Pfrh5) is a promising malaria vaccine candidate, given its limited polymorphism, its essential role in parasite survival, a lack of immune selection pressure and higher efficacy against multiple parasites strains. This study evaluated the genetic diversity of Pfrh5 gene among parasites from regions with varying malaria transmission intensities in Mainland Tanzania, to generate baseline data for this potential malaria vaccine candidate. **Methods:** This study utilized secondary data of 697 whole-genome sequences which were generated by the Malarian Community Network. The samples which were sequenced to generated the data were collected between 2010 and 2015 from five districts within five regions of Mainland Tanzania, with varying endemicities (Morogoro-urban district in Morogoro region, Muheza in Tanga, Kigoma-Ujiji in Kigoma, Muleba in Kagera, and Nachingwea district in Lindi region). Wright's fixation index (FST), Wright's inbreeding coefficient (Fws), Principal component analysis (PCA), nucleotide diversity (π), haplotype network, haplotype diversity (Hd), Tajima's D, and Linkage disequilibrium (LD) were used to assess the diversity of the gene. **Results:** Of the sequences used in this study, 84.5% (n = 589/697) passed quality control and 313 (53.1%) were monoclonal (contained infections from a single strain of P. falciparum) and were used for haplotype diversity and haplotype network analysis. High within-host diversity (Fws < 0.95) was reported in Kigoma-Ujiji (60.7%), Morogoro-urban (53.1%), and Nachingwea (50.8%), while Muleba (53.9%) and Muheza (61.6%) had low within-host diversity (Fws ≥ 0.95). PCA did not show any population structure and the mean FST value was 0.015. Low nucleotide diversity values were observed across the study sites (mean $\pi = 0.00056$). A total of 27 haplotypes were observed among the 313 monoclonal samples and under-fives exhibited higher haplotype counts. The Pf3D7 was detected as Hap_1, which occurred in 16/313 (5.1%) monoclonal sequences. Negative Tajima's D values were observed among the parasite populations in all the study sites. **Conclusion:** Low levels of polymorphism in the pfrh5 gene were observed based on low nucleotide and haplotype diversity, a lack of population structure and negative Tajima's D values. This study provides essential data on the diversity of the Pfrh5 gene indicating that it can be considered in the development of the next generation malaria vaccines. Robust and intensive studies of this and other candidate genes are crucial to support the prioritization of the Pfrh5 gene for potential inclusion in a broadly cross-protective malaria vaccine.

253. Kisambale, A.J., Pereus, D., Mandai, S.S., *et al*… (2025). Genetic diversity of Plasmodium falciparum reticulocyte binding protein homologue-5, which is a potential

malaria vaccine candidate: baseline data from areas of varying malaria endemicity in Mainland Tanzania. *Malaria Journal,* Vol. 24(29). Doi:10.1186/s12936-025-05269-x.

Abstract

Background: The limited efficacy of the two recently approved malaria vaccines, RTS, S/AS01 and R21/Matrix- M™, highlights the need for alternative vaccine candidate genes. Plasmodium falciparum Reticulocyte Binding Protein Homologue 5 (Pfrh5) is a promising malaria vaccine candidate, given its limited polymorphism, its essential role in parasite survival, a lack of immune selection pressure and higher efficacy against multiple parasites strains. This study evaluated the genetic diversity of Pfrh5 gene among parasites from regions with varying malaria transmission intensities in Mainland Tanzania, to generate baseline data for this potential malaria vaccine candidate. **Methods:** This study utilized secondary data of 697 whole-genome sequences which were generated by the MalariaGEN Community Network. The samples which were sequenced to generated the data were collected between 2010 and 2015 from five districts within five regions of Mainland Tanzania, with varying endemicities (Morogoro-urban district in Morogoro region, Muheza in Tanga, Kigoma-Ujiji in Kigoma, Muleba in Kagera, and Nachingwea district in Lindi region). Wright's fixation index (FST), Wright's inbreeding coefficient (Fws), Principal component analysis (PCA), nucleotide diversity (π), haplotype network, haplotype diversity (Hd), Tajima's D, and Linkage disequilibrium (LD) were used to assess the diversity of the gene. **Results:** Of the sequences used in this study, 84.5% (n = 589/697) passed quality control and 313 (53.1%) were monoclonal (contained infections from a single strain of P. falciparum) and were used for haplotype diversity and haplotype network analysis. High within-host diversity (Fws < 0.95) was reported in Kigoma-Ujiji (60.7%), Morogoro-urban (53.1%), and Nachingwea (50.8%), while Muleba (53.9%) and Muheza (61.6%) had low within-host diversity (Fws ≥ 0.95). PCA did not show any population structure and the mean FST value was 0.015. Low nucleotide diversity values were observed across the study sites (mean $\pi = 0.00056$). A total of 27 haplotypes were observed among the 313 monoclonal samples and under-fives exhibited higher haplotype counts. The Pf3D7 was detected as Hap_1, which occurred in 16/313 (5.1%) monoclonal sequences. Negative Tajima's D values were observed among the parasite populations in all the study sites. **Conclusion:** Low levels of polymorphism in the pfrh5 gene were observed based on low nucleotide and haplotype diversity, a lack of population structure and negative Tajima's D values. This study provides essential data on the diversity of the Pfrh5 gene indicating that it can be considered in the development of the next generation malaria vaccines. Robust and intensive studies of this and other candidate genes are crucial to support the prioritization of the Pfrh5 gene for potential inclusion in a broadly cross-protective malaria vaccin*e.*

254. Kisenge, R.R., Godfrey, E., Ideh, R.C., *et al*… (2025). Development and Internal Validation of a Risk Assessment Tool to Identify Neonates at Risk for 60-Day Hospital Readmission in Dar es Salaam, Tanzania, and Monrovia, Liberia. *The American journal of tropical medicine and hygiene*, Vol. 112(6). Doi:10.4269/ajtmh.24-0648.

Abstract

Hospital readmissions among neonates are common and may reflect ongoing illness. We conducted a prospective observational cohort study of neonates discharged from two hospitals, one in Dar es Salaam, Tanzania, and one in Monrovia, Liberia, to develop and internally validate a risk assessment tool to identify neonates at risk for unplanned readmission within 60 days of discharge. One hundred and fifteen candidate variables were collected. The outcome of unplanned readmission was identified through phone calls to caregivers. We constructed a multivariable logistic regression model with best subset selection to identify the optimal combination of variables to identify neonates at risk for readmission. We used bootstrap validation with 500 repetitions to internally validate the tool. Of the 2,344 neonates discharged, 98.5% were enrolled and had 60-day outcomes. Of these, 3.6% were readmitted within 60 days of discharge, with 41.7% of readmissions occurring within 14 days of discharge. The risk assessment tool included eight variables that were predictive of readmissions. Neonates who had documented abnormal posturing during hospital admission (adjusted odds ratio [aOR] 7.29, 95% CI 1.51–35.12), hydrocephalus (aOR 7.52, 95% CI 1.21–46.95), and low birth weight (aOR 3.16, 95% CI 1.69–5.92) had the greatest risk of readmission. The overall discriminatory value of the risk assessment tool was 0.77 (95% CI 0.76–0.79). The risk assessment tool demonstrated excellent calibration for predicting readmissions at low scores. However, this tool requires external validation before it can be used in sub-Saharan Africa to direct resources for follow-up of high-risk neonates.

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255. Kisenha, D., Brighton, M., Kitua, D., *et al*... (2025). Clinical characteristics and survival outcomes of patients with renal cell carcinoma in a Tanzanian cohort. *African Journal of Urology*, Vol. *31*(1). Doi:10.1186/s12301-025-00518-6.

Abstract

Background: Renal cell carcinoma (RCC) poses a substantial public health challenge globally; however, there is limited information available regarding its clinicopathological characteristics, treatment strategies, and outcomes in Tanzania. The study aimed to describe the clinicopathological profiles and determine survival outcomes of patients with RCC at a quaternary health facility, the highest referral level in Tanzania. **Methodology**: This retrospective cohort study was conducted in January 2024 among patients diagnosed with RCC and treated at the Urology Department of Muhimbili National Hospital. Clinical, demographic, treatment, and survival data were collected from medical records and through consecutive sampling of patients treated between January 1, 2017, and December 31, 2023, by contacting patients or their next of kin. Descriptive statistics were presented as frequencies, percentages, means, and medians. The Chi-square or Fisher's exact test was used to assess associations between predictor variables and survival. A p-value of less than 0.05 was considered statistically significant. **Results:** The study included 70 patients, with a mean age of 54 ± 17 years and a slight male predominance (54.3%). A significant proportion (34.3%) presented with advanced-stage disease (stage IV). The primary treatment modality was nephrectomy (84%), while the rest received non-surgical care. The common histological variants were clear cell (21.4%) and papillary carcinoma (20%). The in-hospital mortality rate was 11.4%, and the 5-year survival rate was 17.1%. Demographic, clinical, and pathological characteristics did not show significant associations with survival outcomes ($p > 0.05$). **Conclusion:** The study underscores a high mortality rate and the prevalence of advanced-

stage RCC at the time of diagnosis, highlighting the urgent need for strategies to enhance early detection and timely intervention to improve survival outcomes.

256. Kitomary, N.R., Metta, E., Leshabari, M.T., *et al*… (2025). Prevalence and Factors Associated with Probable Alcohol Use Disorder Among Men at Higher Risk of HIV Enrolled in the HIV Pre-Exposure Prophylaxis Program in Tanga, Tanzania. A Call for Integrated Care. *Substance Abuse and Rehabilitation*, Vol *16*. Doi:10.2147/SAR.S553175.

Abstract

Background: Probable alcohol use disorder is rarely on the minds of people who use alcohol, probably due to technicality related to making that diagnosis. Men who have sex with men are more vulnerable to alcohol use, usually as a coping strategy to manage minority distress, stigma, violence and validation. This study determined the prevalence and factors associated with probable alcohol use disorder among men who have sex with men enrolled in the HIV pre-exposure prophylaxis program in Tanga, Tanzania. **Methodology:** This study included 364 men who have sex with men recruited through respondent driven sampling. Structured questionnaire was used for socio-demographic and sexual characteristics data collection. Probable alcohol use disorder was assessed using the Alcohol Use Disorder Identification Test (AUDIT). A modified Poisson regression model was used to determine the factors associated with probable alcohol use disorder among men who have sex with men. **Results:** Our study found that about 45% of participants had probable alcohol use disorder. The prevalence was high among participants with a history of having group sex (aPR=1.29; 95% CI: 1.00–1.65, P=0.051), who had ever paid for oral or anal sex (aPR=1.65; 95% CI: 1.21–2.25, p=0.002), who reported facing financial difficulties (aPR=1.40; 95% CI: 1.10–1.79, p=0.007), those who experienced moderate stigma (aPR=1.44;95% CI: 1.13–1.84, p=0.003) and higher stigma (aPR=1.39;95% CI: 1.02–1.91, p=0.040). **Conclusion:** The prevalence of probable alcohol use disorder was found to be relatively high among men who have sex with men, especially those with a history of group sex, paying for sex, facing financial difficulties and those who reported experiencing a moderate-to-high level of stigma. This highlights the need to intensify health, reproductive and safe sex practices programs while escalating anti-stigma campaigns. We recommend the integration of substance screening and harm reduction services in HIV treatments and prevention programming.

257. Kiula, A.H., Makene, V.A. (2025). Phenotypic and genotypic resistance patterns of Escherichia coli in livestock from Dar es Salaam Tanzania. *Biologia*, Vol. 80(7). Doi:10.1007/s11756-025-01952-1.

Abstract

Misuse of antibiotics in livestock is a growing threat, but studies on antibiotic resistance in these animals, where interaction and antibiotic use are high, remain limited. A total of 155 *E. coli* isolates from pig, goat, and cattle cases were collected from Dar es Salaam abattoirs and

farming regions. Antibiotic resistance against nine commonly used antibiotic agents was determined, and 12 drug-resistant genes were tested. Pigs showed the highest rates of antibiotic resistance: Ampicillin and chloramphenicol (50.9%), trimethoprim/sulfamethoxazole (49%), tetracycline (47%) and erythromycin (41.2%). Prevalence of resistance to the same five antibiotics in cattle was 34%, 26%, 44%, 58% and 32%. Slightly lower resistance rates were observed among isolates from goats, which were 51.8%, 20.4%, 22%, 40.7%, and 22%. In addition, pigs had the highest prevalence of multidrug resistant (MDR) isolates at 56%, followed by cattle at 35.2% and goats at 19.6%. The overall MDR prevalence among all livestock was 36.8%. Most resistance markers analysed were present in all but few isolates with the respective resistance at comparable rates. The markers analysed were the *aad*A1, bla_{TEM}, $bla_{CTX\text{-}M\text{-}1}$, *cat*A1, *cml*A, *dfr*A1, *ere*(A), *qnr*A, *sul*1, *tet*(A) and *tet*(B). There was lack of the *ere*(A) marker among isolates from pigs. The $bla_{CTX\text{-}M\text{-}1}$ marker was not detected from any isolate. The study demonstrates the momentous contribution of pig keeping in the maintenance and spread of antibiotic resistance and multidrug resistance, a potential health risk to human. Expeditious interventions are imperative to protect human and animal health.

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258. Kivuyo, N., Amin, A., Gega, Z, *et al*... (2025). Analysis of surgical margins in breast cancer patients undergoing mastectomy in Tanzania. *BMC Surgery*, Vol. *25*(1). Doi.org/10.1186/s12893-025-03118-x.

Abstract

Background: The quality and completeness of surgery remain critical for optimal oncological outcomes in breast cancer. A key indicator of surgical completeness is the resection margin status, which should ideally be negative, indicated by no ink on the invasive tumor. However, such data is rarely reported from sub-Saharan Africa. This study aims to describe the clinical characteristics of women with non-metastatic breast cancer who underwent a mastectomy and identify the factors influencing the resection margin status at a cancer hospital in Tanzania. **Methodology:** This was a retrospective cohort study analyzing clinical and pathological data of female patients with a histologically confirmed breast cancer at stage I-III, who underwent a mastectomy at Muhimbili National Hospital in Tanzania. Data were extracted from histopathology reports and clinical records, focusing on margin status and associated variables including age, tumor size (T-status), nodal involvement (N-status), histological subtype, grade, luminal subtype, laterality, and receipt of neo-adjuvant therapy. The primary outcome was margin status post-mastectomy. Descriptive statistics were used to summarize patient characteristics, and chi-square tests were applied to assess associations between variables and margin status. Statistical significance was set at $p < 0.05$. **Results:** Out of the 1,020 patients analyzed, margin status was documented for 976 cases. Among these, 801 patients (82.1%) had negative margins, while 175 (17.9%) had positive or close margins; of the latter, 88.6% were positive and 11.4% close. Most patients with margin involvement (88%) had only a single margin affected. The deep margin was most frequently involved in 87% of patients with involved margins, followed by the superior margin in 57%. Margin involvement was significantly higher among younger patients, particularly those under 30 years of age ($p < 0.001$), and was also strongly associated with advanced T-status ($p < 0.001$), especially T4 tumors, where 31.7% had involved margins. No significant associations were found

with histological subtype, luminal classification, laterality, receipt of neoadjuvant therapy. **Conclusion:** This study revealed a high rate of margin positivity following mastectomy, largely driven by advanced tumor stage and young age at presentation. To improve surgical outcomes in low-resource settings, we recommend interventions to improve earlier diagnosis and expanded use of neoadjuvant therapy for patients with locally advanced disease.

259. Kivuyo, N., Chibwae, A., Sanga, G., *et al*… (2025). An eight-year asymptomatic retention of a knife blade in the chest: a case report. *Journal of Surgical Case Reports*, Vol. 6. Doi:10.1093/jscr/rjaf325.

Abstract

Retained foreign bodies in the thoracic cavity following penetrating trauma are rare and typically identified shortly after injury. However, prolonged asymptomatic retention is possible, posing diagnostic challenges, especially in resource-limited settings. A 44-year-old male, otherwise healthy, presented with a right chest wall sinus discharging pus, 8 years after sustaining multiple stab wounds treated with primary first aid only. Imaging performed during the current presentation revealed a retained knife blade within the right hemithorax. A right thoracotomy was performed, and the foreign body was successfully removed. The patient had an uncomplicated postoperative recovery. This case underscores the potential for significant delayed complications from untreated penetrating chest trauma, particularly in settings with limited access to definitive surgical care. Improved trauma management protocols, including enhanced initial evaluation and follow-up, are essential to prevent such long-term morbidity in resource-constrained environments.

Keywords: *penetrating injury, retained foreign body, thoracotomy, thoracic surgery, trauma surgery.*

260. Kivuyo, N., Misidai, M., Amin, A., *et al*… (2025). Axillary Lymph Node Yield and Nodal Burden in Breast Cancer: Experience from a Large Cancer Center in Sub-Saharan Africa. *World Journal of Surgery*. Vol, 49(10). Doi:10.1002/wjs.70060.

Abstract

Background: Axillary lymph node yield (LNY) is a critical component of breast cancer staging and treatment planning. International guidelines recommend retrieving ≥ 10 lymph nodes during axillary lymph node dissection (ALND) to ensure adequate staging. This study assessed LNY and its association with pathological nodal burden among patients with breast cancer undergoing ALND at Muhimbili National Hospital (MNH), Tanzania. **Materials and Methods:** We conducted a retrospective analysis of female patients with breast cancer who underwent ALND between January 2018 and December 2024. Clinical and pathological data were abstracted from institutional records. LNY was categorized as < 5, five to nine, or ≥ 10 nodes. Ordinal logistic regression was used to identify factors associated with the pathological nodal stage (pN0–pN3). **Results:** Among 871 patients, only 27% had ≥ 10 lymph nodes retrieved. Median LNY was 7 (IQR: 4–10). Higher LNY was strongly associated with higher pN category (aOR for five to nine nodes: 2.33; 95% CI: 1.67–3.26; aOR for ≥ 10 nodes: 8.93; 95% CI: 5.89–13.53; and $p < 0.001$).

Additional independent predictors of higher nodal burden included tumor size (T2: aOR 2.34; 95% CI: 1.26–4.34; T3: aOR 2.54; 95% CI: 1.40–4.60; T4: aOR 3.34; and 95% CI: 1.84–6.09), histological grade 2 (aOR 1.63 and 95% CI: 1.09–2.45), and lobular histology (aOR 4.96 and 95% CI: 1.41–17.38). Neoadjuvant chemotherapy was associated with a lower nodal burden category in the univariate analysis, but this association was no longer significant after adjusting for LNY. **Conclusion:** Low LNY is prevalent and strongly associated with under staging of pathological nodal burden. Targeted quality improvement interventions are needed to optimize nodal evaluation and staging, ensuring appropriate treatment strategies in resource-limited settings.

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261. Kivuyo, N.E., Kitua, D.W., Chikelea, M.E., *et al*… (2025). Treatment outcomes and the associated factors among breast cancer patients in Tanzania: a retrospective cohort study. Doi:10.3332/ecancer. 2025.187.

Abstract

Background: Breast cancer (BC) is the second most prevalent cancer among women in sub-Saharan Africa. Despite dedicated efforts to enhance BC care in the region through improving diagnostic and treatment services, little is known about the treatment outcomes of BC patients and the predictors of outcomes in our local settings have not been enumerated. This study aimed to investigate the treatment outcomes and the associated factors among BC patients in Tanzania. **Materials and methods:** This was a retrospective cohort study at Muhimbili National Hospital and Ocean Road Cancer Institute in 2022. It involved female patients 18 years and above who were confirmed to have BC by histology. A sample size of 240 was determined to be adequate to detect a survival difference between the stages. Using Research Electronic Data Capture, clinical characteristics were collected from patients' treatment records and survival status was ascertained both by case notes or phone calls to patients or next of kin. Data were transferred into Statistical Package for the Social Sciences version 27 for subsequent analysis where continuous variables were summarised as proportions. We used chi-square and Fisher's exact tests to determine the association between various patients' characteristics and treatment outcomes. Kaplan-Meyer analysis was used to determine survival and a p-value less than 0.05 is considered statistically significant. **Results:** In total, 298 BC patients were studied with a mean age of 53.2 ± 13.6 (27–89). Invasive ductal carcinoma, parity and late stage at presentation were predominant features in these patients. A triple negative subtype was identified in 35.2% of the women. Only 27.9% and 33.6% of the patients received neoadjuvant and adjuvant chemotherapy respectively, while 8.1% of the patients were palliated. The overall 5 years survival was 29.7%, while being significantly poor in patients with advanced stages of the disease. Luminal subtypes, parity, menopausal status and age had some influence on BC survival among our patients but not in a significant manner. **Conclusion:** Mastectomy is predominantly offered to BC patients in Tanzania with no standardisation of use of chemo/radiation both in neo/adjuvant settings. Some important prognostic factors were missing including a lack of standardised work up of patients. With the predominance of advanced stage at presentation, BC carries unacceptable high mortality in Tanzania. Efforts to detect BC early, understand patients' perception of their disease and standardisation of care are needed to successfully implement treatment guidelines.

Keywords: *breast cancer, breast malignancy, %-year outcomes, breast cancer in Africa, breast cancer survival, treatment outcomes.*

262. Kiwango, F. (2025). Challenges in the Repatriation Processes of a Foreign Citizen with Schizophrenia: A Case Report from Tanzania. *Case Reports in Psychiatry*, Vol. 2025(1). Doi:10.1155/crps/3483266.

Abstract

Background: Schizophrenia is a chronic mental health disorder characterized by an array of symptoms, leading to impairment of functioning. Many patients with schizophrenia tend to have long-stay hospitalizations due to several factors, one of them being the repatriation process. **Case Presentation:** I report the case of a 29-year-old male foreign citizen who presented with auditory hallucinations, paranoid delusions, and aggressiveness. The patient had a history of multiple admissions due to poor drug adherence. After being admitted to the psychiatry ward, the patient improved and was ready for discharge after 4 weeks, but struggled to remember his relatives' phone numbers. Due to financial constraints and poor support, the repatriation process was delayed for 160 days. **Conclusion:** The present case highlights the challenges in managing schizophrenia abroad, urging international protocols to streamline the repatriation process and address financial, logistical, and social barriers for improved outcomes.

263. Kiwango, F., Mboya, E., Ghaimo, F.E., *et al*... (2025). Prevalence of significant anxiety symptoms and associated factors among adult people with HIV/AIDS in care and treatment clinic centers in Kilimanjaro region, Tanzania: a cross-sectional study. *BMC psychiatry*, Vol. 25(1). Doi:10.1186/s12888-025-06769-5.

Abstract

Background: People with human immunodeficiency virus (PWH) are more prone to generalized anxiety disorder. There is a limited understanding of the prevalence of significant anxiety symptoms and its associated risk factors among adult PWH in the Tanzanian context. This study aims to determine the prevalence of significant anxiety symptoms and related risk factors among adult PWH attending care and treatment clinics in Moshi Municipality, Kilimanjaro Region. **Methods:** We used a multistage random cluster sampling approach to select participants at four Care and treatment centers (CTCs) of Kilimanjaro Christian Medical Centre, Mawenzi Regional Referral Hospital, Majengo, and Pasua Health Centre, by location at tertiary, secondary, and primary health care levels. The seven-item Generalized Anxiety Disorder (GAD-7) screening tool assessed levels of generalized anxiety symptoms with significance set at scores ≥ 10. Sociodemographic, clinical, and psychosocial characteristics were collected using a semi-structured questionnaire. Bivariate analyses determined factors associated with significant anxiety symptoms (GAD-7 ≥ 10) at p-values ≤ 0.20 for inclusion in the multivariate model. Adjusted prevalence ratios with confidence intervals are reported with significance set at a p-value of < 0.05. **Results:** Out of 593 PWH participants, 12.48% screened positive for significant anxiety symptoms. Participants treated at the tertiary health facility level (aPR = 2.91, 95% CI: 2.48–3.41, P-value = 0.001), early adulthood 25–44 years (aPR = 1.75, 95% CI: 1.27–2.42, P-value =

0.001), with higher anxiety sensitivity (aPR = 3.28, 95% CI: 2.08–5.19, *P*-value = 0.001), and higher levels of perceived social support (aPR = 2.09; 95% CI: 1.34–3.27, *P*-value = 0.001) showed a higher likelihood of significant generalized anxiety symptoms. **Conclusions:** Significant anxiety symptoms were common among adult PWH. Integrating routine generalized anxiety screening and raising PWH's and primary caregivers' awareness of GAD is recommended.

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264. Klingenberg, C., Justine, M., Moyo, S.J., *et al*… (2025). Home administration of a multistrain probiotic once per day for 4 weeks to newborn infants in Tanzania (ProRIDE): a double-blind, placebo-controlled randomised trial. *The lacet Global Health*, Vol. 13(6). Doi:10.1016/s2214-109x(25)00064-6.

Abstract

Background: Probiotics are commonly given to preterm and term infants to reduce gut colonisation and prevent disease. Evidence for the beneficial effect of probiotic therapy is sparse, particularly in term infants from low-income and middle-income countries with high infant morbidity and mortality. This study aimed to assess whether a 4-week course of probiotic therapy might reduce death and hospitalization up to age 6 months in healthy infants in Tanzania. **Methods:** In this investigator-initiated, single-site, double-blind, placebo-controlled randomised trial conducted at Haydom Lutheran Hospital and in the surrounding area in northeast Tanzania, we randomly assigned healthy infants born in the hospital, in other local health facilities, or at home who weighed 2 kg or more (1:1) to receive a multistrain probiotic mixture (including *Lactobacillus acidophilus*, *Bifidobacterium bifidum*, and *Bifidobacterium longum* subsps *infantis*) or placebo once per day for 4 weeks. Caregivers of study participants, investigators, study staff, hospital clinicians, and individuals involved in data management or analysis were masked to treatment allocation during all the data collection and management phases of the trial. Caregivers were shown how to give five drops (0·2 mL) of allocated treatment solution orally to their infant and then requested to administer this treatment once per day for 4 weeks or until the bottle was empty. During scheduled study visits at ages 1 week, 6 weeks, and 6 months, trained field workers visited each participant's home and used a standardized questionnaire to obtain a history of recent illness, medication use, breastfeeding practice, and the current condition of the child. At the 6-week and 6-month follow-up visits, the participants' weights and lengths were measured, and stool samples were collected. Stool samples were used for analysis of extended-spectrum β-lactamase-producing Enterobacter ales (to evaluate gut colonisation rates) and metagenomic sequencing. The primary outcome was a composite of death or hospitalization during the first 6 months of life, assessed in three populations: a modified intention-to-treat population (mITT), which included all participants with a known primary outcome at 6 months of follow-up; the intention-to-treat population, which included all participants who were enrolled and randomly assigned to a treatment group; and the per-protocol population, which included only infants in the mITT whose caregivers reported having given them the study solution once per day during the 4-week intervention period. This trial is registered with ClinicalTrials.gov, NCT04172012, and is complete. **Findings**: Between Feb 1, 2022, and Jan 4, 2023, 2000 participants were enrolled and randomly assigned to the probiotic (n=1000) or placebo (n=1000) groups, with administration of the probiotic or placebo treatment beginning on median day 1 (IQR 1–2) of life. 6 months after

inclusion, data for the primary outcome were available for 1945 (97·3%) of the 2000 participants. By mITT, there was no statistically significant difference in the primary outcome between the two study groups. Hospitalisation or death occurred in 34 (3%) of 970 participants in the probiotic group and 31 (3%) of 975 participants in the placebo group (crude relative risk 1·10, 95% CI 0·68–1·78). There were also no differences in the overall incidence of adverse events between the groups, but fewer caregiver-reported gastrointestinal events were reported in the probiotic group. **Interpretation:** Daily administration of a multistrain probiotic mixture in the first 4 weeks of life did not reduce the rate of death or hospitalisation up to age 6 months among infants in Tanzania and did not cause any short-term safety concerns. **Funding:** Western and Northern Norway Regional Health Authorities, Trond Mohn Foundation, and Joint Programming Initiative on Antimicrobial Resistance.

265. Koka, C. E., Bakari, S., Njiro, B.J., *et al*... (2025). Uptake of iron and folic acid supplements among pregnant women in Dar es Salaam, Tanzania. *PLOS Global Public Health*, Vol. 5(10). Doi: 10.1371/journal.pgph.0005278.

Abstract

Anemia in pregnancy is a public health concern globally, with the highest prevalence observed in low and middle-income countries (LMICs). Tanzania is no exception. Iron and folic acid supplements (IFAS) intake is a proven intervention recommended to prevent anemia in pregnancy. Despite interventions in Tanzania, IFAS uptake has remained low due to reasons that are not well documented. This study aimed to assess the uptake and determinants of IFAS during pregnancy in Dar es Salaam, Tanzania. A quantitative cross-sectional study was conducted to assess levels and determinants of IFAS uptake during pregnancy in Dar es Salaam, Tanzania. Data was collected among 428 women post-delivery in postnatal wards of Temeke, Mwananyamala, and Amana regional referral hospitals. Descriptive analyses were conducted to determine levels and characteristics of IFAS uptake, whereas bivariate and multivariate analyses were conducted to examine determinants of uptake using SPSS version 23. Among the study participants, only 136 (31.8%) pregnant women who attended antenatal care (ANC) at referral hospitals had adequate IFAS uptake. Primiparous women were 74% less likely to achieve adequate IFAS uptake compared to multiparous women (aOR=0.26; 95% CI: 0.10 - 0.67). Women who attended five or more ANC visits (aOR=11.7; 95%CI: 1.30 - 63.66) and those from wealthier households (aOR=11.68; 95% CI: 2.91 - 89.57) were about 12 times more likely to achieve adequate IFAS uptake. Similarly, women from food-secure households had a ninefold higher likelihood of adequate uptake compared to those from severely food-insecure households (aOR=9.21; 95% CI: 1.82 - 10.33). Only one in three pregnant women attending regional referral hospitals in Dar es Salaam achieved adequate IFAS uptake to prevent anemia. Targeted interventions are urgently needed, particularly among pregnant women with higher parity, fewer ANC visits, and those facing economic hardship, food insecurity, and challenging family support.

266. Komba, E. V., Nyakiha, M., Lyuu, T. (2025). Prevalence of gastric cancer and its associated mortality among patients undergoing upper gastrointestinal endoscopy at a

tertiary-level hospital in Tanzania. *BMC Gastroenterology*, Vol. 25(1). Doi: 10.1186/s12876-025-04331-x.

Abstract

Background: Descriptive data on gastric cancer (GC) from African countries are limited. We describe the prevalence, clinicopathological features, short-term outcomes, and factors associated with gastric cancer at Muhimbili National Hospital (MNH), which is a tertiary-level facility in Tanzania. **Methods:** This cross-sectional study enrolled consenting patients aged ≥ 18 years who underwent diagnostic Upper endoscopy at MNH from September 2023 to February 2024. The participants were followed up for 90 days to determine whether they died or developed gastrointestinal bleeding or gastric outlet obstruction. Sociodemographic and clinicopathological data were collected through a questionnaire and analysed via SPSS software. The prevalence of gastric cancer and short-term outcomes are expressed as proportions. Logistic regression analysis was used to test the significance of the associations between predictor variables and gastric cancer. A p-value of < 0.05 was considered significant. **Results:** A total of 870 patients were included, 459 (52.8%) of whom were male. The mean (± SD) age of the participants was 53.3 (± 17.4) years. GC was observed in 77 (8.9%) patients, with a male-to-female ratio of 0.83:1 and a mean age of 59.4 (± 10.6) years. The symptoms associated with GC were upper abdominal pain in 71(92.2%), weight loss 39(50.6%), abdominal fullness 24(31.2%), and vomiting 23(29.9%). H. pylori antibody testing was positive in 63 (81.8%) GC patients. The antrum was the most common location for GC in 51 (66.2%) patients, with ulcerative morphology in 47 (61.0%) patients. Histologically, 72 patients (96.1%) had adenocarcinomas. H. pylori infection (aOR 4.711; 2.493–8.902; P < 0.001) and cigarette smoking (aOR 2.477; 1.453–4.221; P = 0.001) were independently associated with GC. The 90-day mortality rate was 45.5% (35/77). Within the 90-day follow-up period, 88.3% (68/77) of the patients received palliative care, and 9.1% (7/77) were eligible for curative treatment. **Conclusions:** The prevalence of gastric cancer among patients undergoing upper gastrointestinal endoscopy at Muhimbili National Hospital is high. Most patients have advanced disease at presentation, and the 90-day mortality rate is high. Cigarette smoking and H. pylori infection were independently associated with GC in this population.

267. Komba, S.C., Msonde, S.E. (2025). Practices and Challenges of Preserving Audio-Visual Records at Tanzanian Television Stations. *Journal of Archival Organization*, Vol. 22(4). Doi: 10.1080/15332748.2025.2588068.

Abstract

This study investigated audiovisual records preservation at selected television stations in Tanzania. A total of 60 staff working in television stations participated in this research. Using questionnaires and interviews, the SPSS program was used to generate descriptive statistics, and a coding strategy using ATLAS.ti software was used to analyze the qualitative data. The findings reveal a lack of

audiovisual preservation policies, limited usage of technology, and inadequately qualified staff, hindering the effective preservation of audiovisual content. Therefore, television companies should hire qualified personnel, implement relevant policies, adopt modern technologies, and consult records management professionals for effective audio-visual records preservation practices.

Keywords: *Audio-visual records, records preservation, television companies, television stations, Tanzania.*

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268. Koster, J.R., Majani, N.G., Kalezi, Z.E., *et al*… (2025). The quality of life of children with heart disease in Tanzania: a single-center study. *BMC Pediatrics,* Vol. 25(436). Doi:10.1186/s12887-025-05761-y.

Abstract

Background: The demand for surgical intervention for congenital heart disease (CHD) exceeds the available resources in low- and middle-income countries (LMICs). This has resulted in a growing population of children with CHD, with only a few receiving surgery and many more waiting. Health-related quality of life (HRQoL) and its impact on the pediatric CHD population in these settings have been largely overlooked, and limited research has been conducted. Therefore, this study aimed to explore HRQoL in the pediatric CHD population in Tanzania by comparing unoperated and operated patients, thus bridging the knowledge gap. **Methods:** This cross-sectional study included patients with CHD, 2 to 18 years old, without severe comorbidities, at the Jakaya Kikwete Cardiac Institute, either unoperated or operated, at least six months after cardiac surgery. Clinical and sociodemographic variables (scored 0 to 1, resp. poorest to highest) were collected. The Pediatric HRQoL Generic Core Scale (PedsQL™ 4.0 SF15, Swahili Version) provided HRQoL scores by parental report and self-report (5 years and above) for different domains (physical, social, emotional, and school). Questions were scored on a Likert linear analogue scale; higher scores indicated better HRQoL. The between-group scores were compared with Student's t test and the Mann–Whitney U test. Generalized linear models were used to identify predictors of HRQoL. **Results:** Mean age of the study group was 6.3 ± 3.7 years, with a slight female predominance (n = 110, 53.9%). Operated patients had a higher socioeconomic status score (0.71/1 vs. 0.66/1) and more frequent early diagnosis (< 1 year; 67.8% vs. 47.1%). The complexity of cardiac diagnosis (simple, moderate or complex) was significantly different between groups ($p = 0.001$). Parent-reported HRQoL scores were significantly higher for the post-operative group (90.8 ± 10.2 vs. 80.5 ± 16.7, $p < 0.001$), with the most noticeable difference in the physical domain (effect size $d=-0.813$, $p < 0.001$). Being post palliative or curative surgery and higher socioeconomic status were found to be significant predictors of better HRQoL. HRQoL significantly decreased with increasing severity of heart failure symptoms. **Conclusions:** The HRQoL of operated Tanzanian children with CHD differed significantly from that of their unoperated counterparts. Reducing symptoms for those on the waiting list can improve their HQoL. In this setting, HQoL in children with CHD is strongly predicted and influenced by socioeconomic status, emphasizing the need for interventions to address socioeconomic disparities and improve patient outcomes.

Keywords: *Health-related quality of life, Congenital heart disease, Cardiac surgery, Lower-middle income country, Africa.*

269. Kotseva, K., De Bacquer, D., Jennings, C., *et al*… (2025). Cardiac Rehabilitation in Patients with Coronary Heart Disease – Provision, Attendance, and Outcomes: Results from the INTERASPIRE Survey from Fourteen Countries Across Six WHO Regions. *Glob Heart*, Vol. 20(1). Doi: 10.5334/gh.145.

Abstract

Background: INTERASPIRE was an observational study of patients with coronary heart disease (CHD) from 88 hospitals in 14 countries across all six WHO regions. The objective was to describe the proportions of patients referred to and attending cardiac rehabilitation (CR) programmes and to compare lifestyle and risk factor target achievement according to participation in a CR programme. **Methods:** Patients 18–80 years of age, with a first or recurrent coronary hospitalisation (acute coronary syndrome and/or revascularisation procedure) were identified and invited to an interview and examination, between six months and two years after the index hospitalisation. **Results:** Overall, 4,548 (21.1% female) patients were interviewed a median of 1.05 (interquartile range 0.76–1.45) years after hospitalization. Of those patients, 34.4% reported having been advised to participate in a CR programme, though the percentage varied widely by country, from 4.0% in Kenya to 69.6% in Poland. Among patients advised to participate in CR, 57.1% participated in ≥50% of all sessions, 15.4% participated in <50% of the sessions, and 27.4% did not participate at all. Only 19.6% of all patients recruited to the study attended ≥50% of sessions. Content of programmes reported by patients also varied enormously between countries. Low education level, elective PCI, or unstable angina as recruiting events were associated with lower attendance rates. Attendance at ≥50% of all CR sessions was associated with a lower prevalence of persistent smoking and physical inactivity, better control of blood pressure and LDL-cholesterol, and a higher use of cardioprotective medications. **Conclusions:** INTERASPIRE provides a standardised international picture of CR provision and attendance in patients with CHD. Despite CR being a Class 1 recommendation in all international guidelines, only one third of CHD patients reported being advised to attend any form of CR and just one in five patients attended 50% of the sessions, with striking heterogeneity between regions and countries. National cardiology societies should advocate to their governments for urgent investment in standardised CR services.

Keywords: *cardiac rehabilitation, INTERASPIRE, coronary heart disease, secondary prevention, referral*

270. Kwikima, U., Salehe, M. (2025). AIIT-01 leveraging artificial intelligence for the diagnosis and management of adult diffuse gliomas in resource limited settings. *Neuro-Oncology Advances*, Vol. 7. Doi: 10.1093/noajnl/vdaf213.001.

Abstract

Background & Aims: Adult diffuse gliomas present a global healthcare challenge, with LMICs facing diagnostic and treatment barriers due to limited neuroimaging, molecular testing, and expertise. These constraints delay management and worsen outcomes. AI offers cost-effective, scalable solutions for neuro-oncology in resource-limited settings. This review examines AI's

potential to enhance glioma diagnosis, prognostication, and treatment monitoring in LMICs. **Methods:** We reviewed AI applications in neuro-oncology, focusing on tumor segmentation, deep learning-based glioma classification, and MRI-based molecular prediction. Feasibility in LMICs was evaluated, particularly radiogenomics for IDH mutation and 1p/19q co-deletion prediction. We also analyzed AI-driven prognostic models and radiomic differentiation of tumor progression from pseudoprogression, emphasizing the need for LMIC-representative datasets. **Results:** AI tools help bridge diagnostic and management gaps in LMICs. Radiogenomic models predict molecular markers non-invasively, reducing the need for costly genomic tests. AI-driven prognostic models integrate imaging and clinical data for personalized risk stratification. Machine learning aids in distinguishing tumor progression from pseudoprogression, reducing reliance on expert interpretation. However, challenges like data scarcity, limited generalizability, and insufficient clinical validation in LMICs hinder implementation. **Conclusions:** AI has the potential to revolutionize glioma management in LMICs by improving early detection, prognostication, and treatment monitoring while reducing reliance on costly infrastructure. However, successful implementation requires overcoming data limitations, ensuring model generalizability, and fostering multidisciplinary collaborations. Strengthening AI research, capacity building, and policy support is essential to achieving equitable access to AI-driven neuro-oncology innovations in resource-limited settings.

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271. Kyara, V.A., Kevin, R., Andrew, M., *et al*... (2025). "Efficacy of Limited Cyclophotocoagulation in the Treatment of Refractory Glaucoma Among Adults Patients Treated at a Tertiary Hospital in Northern Tanzania". *Ophthalmology Research: An International Journal,* Vol. 20(4). Doi:10.9734/or/2025/v20i4468.

Abstract

Background: Refractory glaucoma poses a therapeutic challenge due to poor response to standard medical and surgical treatments. Cyclophotocoagulation (CPC) is an alternative method for lowering intraocular pressure (IOP) in such cases; its use is often limited to advanced disease due to variable outcomes and complications after a destructive procedure on the ciliary body. **Objective:** To assess the efficacy of limited CPC in reducing IOP among adult patients with refractory glaucoma at Kilimanjaro Christian Medical Center, Ophthalmology department, between 2023 and 2024. **Methodology:** A prospective study was conducted involving 74 patients who underwent transscleral CPC. A laser was applied to the inferior 180° of the ciliary body with 10 burns per quadrant at 2000 mW for 2 seconds per burn. Treatment success was defined as achieving an IOP ≤ 21 mmHg and ≥ a 20% reduction from baseline at three months with or without treatment. **Results:** At three months, 36 patients (48.6%) achieved target IOP (≤ 21mmHg and ≥ 20% reduction), while 63 (85.1%) had at least 20% reduction in IOP. The median baseline IOP decreased from 46.5 mmHg (IQR 39-56) to 25mmHg (IQR 18-38). Lower pre-treatment IOP (AHR=0.95; 95% CI: 0.91-0.99; P= 0.015) and optic disc notching were positively associated with treatment success, while ocular comorbidities were negatively associated (AHR = 0.33; 95% CI: 0.14-0.74; P=0.007). The most common complications were transient uveitis (10.8%) and cystoid macular edema (8.1%). **Conclusion:** Limited CPC showed moderate effectiveness in lowering IOP after a single session, with minimal complications. However, nearly half of the patients

required a repeat procedure to achieve target IOP at three months. **Keywords:** Refractory glaucoma, limited cyclophotocoagulation, transscleral CPC, intraocular pressure reduction, laser therapy complications

272. Kyejo, W., Samji, S., Ismal, A., *et. al*… (2025). Prevalence and Risk Factors of Hypotension in Patients Undergoing Caesarean Section with Spinal Anaesthesia at Muhimbili National Hospital. *The East African Health Research Journal*, Vol. 9(1). Doi:10.24248/eahrj. v9i1.837.

Abstract

Background: Spinal anaesthesia is a common regional technique for caesarean sections, but is associated with hypotension in up to 80% of patients. Preventive measures include; intravenous fluid preloading, left uterine displacement, compression stockings, and vasopressors. This study aimed to determine the prevalence and risk factors of hypotension during spinal anaesthesia in pregnant patients undergoing caesarean section at Muhimbili National hospital. **Methods:** A descriptive cross-sectional study was conducted at Muhimbili National Hospital's Obstetric theatre, involving patients who received spinal anaesthesia during caesarean section from August 2021 to January 2022. The study excluded patients with sedation, anti-hypertensive, pregnancy-induced hypertension, modified Bromage score, or combination anaesthesia. Data was collected, and analysed using SPSS version 20. **Results:** A total of 300 patients were enrolled (calculated sample size 270 plus 10% margin). Of these, 33.3% underwent elective caesarean section and 66.7% emergency caesarean section. Most patients (92%) received 0.5% hyperbaric bupivacaine, while 8% received 5% heavy lidocaine. Hypotension occurred in 56.7% of patients (95% CI: 0.511–0.623). Risk factors included preload <10 mL/kg, higher sensory block levels, and absence of wedge positioning. **Conclusion:** Hypotension during spinal anaesthesia for caesarean section is common. Preventive measures, including adequate fluid preload, wedge positioning, and careful monitoring of sensory block height, are essential to improve maternal hemodynamic stability.

273. Kyomo, M.E., Mpumi, N., Sauli, E., *et al*... (2025). Efficiency of honey–grape blend in reducing radiation-induced mucositis in locally advanced head and neck squamous cell carcinoma. AIMS Medical Science, Vol. 12(1). Doi: 10.3934/medsci. 2025007.

Abstract

Objectives: This study assessed the efficacy of a honey–grape blend in reducing the severity and onset of radiation oral mucositis (ROM) in patients with locally advanced squamous cell carcinoma of the head and neck. Oral mucositis is an acute side effect caused by chemotherapy or radiotherapy in the head and neck region. ROM affects patients' quality of life and treatment expenses. Various pharmaceutical and natural remedies, such as sucralfate, aloe vera, and amifostine, are used to mitigate the effects of ROM. However, the available modalities' efficacy is

low and is associated with many side effects**. Materials and methods:** This cohort study was conducted at the Ocean Road Cancer Institute and Besta Polyclinic in Tanzania. The study included 73 patients with locally advanced squamous cell carcinoma of the head and neck treated from March 2024 to August 2024. The World Health Organization mucositis grading system was used to assess patients' progress weekly. Data analysis was conducted using Statistical Package for Social Science (SPSS) version 27. **Results:** Delayed onset (15% Grade 3 for the honey–grape group and 45% Grade 3 for the control group at 28 days) and reduced the severity of ROM (only 20% Grade 3 with no Grade 4 for the honey–grape group while for the control group, it was 25% Grade 3 and 20% Grade 4 at 45 days) (p-value < 0.001). Body weight changes at starting and after completion of radiotherapy were observed (2.65 kg average weight loss for the control group, 1.8 kg, 0.45 kg weight gain for the honey group, and the honey–grape blend group). Prevalence between genders was 62% males and 38% females. **Conclusions:** Honey and honey blended with grapes can minimize the severity and delay the onset of ROM in patients with locally advanced head and neck cancer. More studies are needed, since no study has been conducted addressing the efficacy of honey–grape blends in reducing ROM severity.

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274. Laizer, P.J., Deoglas, D.K., Owibingire, S. (2025). Etiology and pattern of zygomatic bone fracture among patients with facial injuries attending Muhimbili National Hospital, Tanzania. *The Pan African Medical Journal*, Vol. 52 (13). Doi: 10.11604/pamj.2025.52.13.42463.

Abstract

The zygomatic bone is frequently fractured following maxillofacial injuries due to its prominence. Fracture of this bone has functional, cosmetic, and psychological effects. Proper management is therefore crucial. Data on the etiology and pattern of zygoma fracture will aid in planning management and setting appropriate preventive measures. The study aimed to determine the etiology and pattern of zygomatic bone fractures among patients with facial injuries attending Muhimbili National Hospital. We carried out a prospective hospital-based cross-sectional study where a consecutive sampling of patients with facial injuries attending Muhimbili National Hospital from May 2021 to March 2022 was done. We interviewed patients with facial injuries on their socio-demographics and etiology of injury using a pre-tested self-administered questionnaire. Thereafter, we used a CT scan of the head to record the pattern of the zygomatic bone fracture. Data were entered in the SPSS computer program version 20.0 for analysis and were presented in the form of frequency distribution tables, graphs, and means. We examined 420 patients with facial injuries; among them, 137 patients had zygomatic bone fractures. The majority were males, and the male-to-female ratio was 7.5:1. Most fractures were found in the age group 20-29 years. The majority of fractures were due to road traffic accidents (RTA). Most patients had no significantly displaced fractures, and fractures with orbital floor involvement were rare. The maxillary bone was the most common concomitant fracture. Zygomatic bone fractures occurred mostly in males in their third decade. Road traffic accidents account for most fractures. Most fractures had no significant displacement. Fractures with orbital floor disruption were rare. Maxillary bone was a common concomitant fracture.

Keywords: Zygomatic bone fracture, fracture pattern, fracture management.

275. Lambert, M., Mmassy, J., Kabissi. S., *et al*… (2025). Lessons from the field: implementing pharmacy services in the Tanzanian hospital setting. *International Health*, Vol. 18(1). Doi:10.1093/inthealth/ihaf079.

Abstract

Introduction: In hospital practice, pharmacists are healthcare professionals trained to store, handle, prepare, and dispense medications that are used inside the hospital. There are benefits if pharmacists provide extended services to patients in hospitals. These include improved health outcomes, increased patient satisfaction, and economic benefits.1 Hospital pharmacy services (HPS) differ by country and even within countries. They can include activities related to the selection, administration, and monitoring of medicines through counselling, communication with other healthcare professionals, medication reviews, reconciliation, and clinical decision-making.1 Although HPS has been implemented in different settings worldwide, there is limited literature on HPS in sub-Saharan Africa. It is difficult to extrapolate international literature to this setting due to the lack of services, trained staff, and medication availability, and its unique population.2 Tanzania could be one of the first examples of extended HPS being implemented more widely in this setting. Here, we outline what HPS should look like in Tanzania, how it can best be implemented, and where implementation should occur first based on multistakeholder perspectives, as well as the lessons we have learned from this.

276. Lawal, Y., Mshelia-Reng, R., Omonua, S.O., *et al*… (2025). Predictors of peripheral neuropathy among persons with diabetes mellitus: A multicenter cross-sectional study. *Journal of the American Podiatric Medical Association*, Vol. 115(1). Doi:10.1186/s42269-025-01314-6.

Abstract

Background: Diabetic peripheral neuropathy (DPN) is a microvascular complication of diabetes mellitus (DM) that causes substantial morbidities, including pain, foot ulcers, lower-limb amputations, and depression. It is said to affect approximately 50% of adults with DM. Understanding the predictors of DPN will help refocus on early preventive strategies to reduce its numerous morbidities. **Methods:** A total of 1,040 persons with DM were consecutively enrolled. Relevant medical history, clinical examinations, and laboratory investigations were performed. Multiple logistic regression was used to determine predictors of DPN. Significance was set at $P \leq .05$. **Results:** Significant predictors of DPN included age (odds ratio [OR], 1.99; $P = .003$); female sex (OR, 1.94; $P = .023$); DM duration (OR, 2.01; $P = .032$); history of systemic hypertension (OR, 1.68; $P = .037$); height (OR, 2.02; $P = .001$); generalized obesity (OR, 2.02; $P = .002$); central obesity (OR, 1.12; $P = .047$); poor control of systolic blood pressure (OR, 1.78; $P = .001$), diastolic blood pressure (OR, 1.45; $P = .006$), fasting plasma glucose (OR, 2.43; $P = .004$), 2-hour postprandial glucose (2HrPP) (OR, 2.83; $P = .001$), and glycated hemoglobin (OR, 2.31; $P = .004$); and peripheral artery disease (OR, 1.89; $P = .002$). The negative predictors of DPN include antidiabetics (OR, 2.39; $P = .008$), antihypertensives (OR, 2.45; $P = .009$), statins (OR, 2.21; $P = .004$), and antiplatelets (OR, 2.46; $P = .030$). **Conclusions:** Significant predictors of DPN include age, DM duration, female sex, height, history

of systemic hypertension, and obesity. Others include poor control of systolic and diastolic blood pressure, fasting plasma glucose, 2HrPP, and glycated hemoglobin levels. Negative predictors include antidiabetics, antihypertensives, statins, and antiplatelets.

277. Lazaro, A., Misidai, M., Kitua, D., *et al*… (2025). Predictors of post-operative complications following thyroid surgeries at a tertiary hospital in Tanzania. *Surgery in Practice and Science*, Vol. 24(100323). Doi: 10.1016/j.sipas.2025.100323.

Abstract

Background Thyroid disorders pose a substantial burden in low- and middle-income countries (LMICs), where late presentation and limited access to specialized care often result in advanced disease at surgery. Despite thyroidectomy being the definitive treatment for many thyroid conditions, data on surgical outcomes and complication rates from sub-Saharan Africa remain scarce. This study aimed to describe the clinical characteristics, surgical approaches, and in-hospital postoperative outcomes of patients undergoing thyroidectomy at a tertiary hospital in Tanzania, and to identify factors associated with postoperative complications. **Materials and Methods:** This was a hospital-based retrospective cohort study involving patients who underwent thyroid surgery between January 2018 and December 2023. Data were retrieved from case notes and surgical records in the hospital's medical records department. Sociodemographic and clinical characteristics were analyzed as predictor variables, while postoperative in-hospital complications were the primary outcomes. Multivariable logistic regression was performed to identify independent predictors of complications. **Results:** A total of 405 patients underwent thyroidectomy during the study period, with a female predominance (89.6%) and a mean age of 48 ± 13 years. The majority presented with anterior neck swelling (98.5%), and 24% had retrosternal extension. Benign pathology accounted for 77% of cases. The overall complication rate was 15.3%, with hypocalcemia (4%) and superior laryngeal nerve injury (3%) being the most common. The mortality rate was 0.5%. Independent predictors of in-hospital complications included total thyroidectomy (aOR: 3.12; 95% CI: 1.08–9.02) and symptom duration exceeding 10 years (aOR: 4.12; 95% CI: 1.60–10.58). **Conclusion:** Postoperative morbidity following thyroidectomy in this setting was primarily driven by delayed presentation and the extent of surgery. Targeted interventions to promote early diagnosis and optimize perioperative care are essential to improve patient outcomes.

***Keywords**: Thyroidectomy Thyroid surgery Africa Thyroidectomy complications.*

278. Lema, R.E., Shayo, G.A., Nkrumbih, Z, *et al*... (2025). Change in lung function abnormalities in patients treated for their first-ever pulmonary tuberculosis in Dar es Salaam, Tanzania. *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases*, Vol. *40*. Doi: 10.1016/j.jctube.2025.100538.

Abstract

Objectives: To document abnormalities in pulmonary function (PF) and associated factors in patients completing treatment for microbiologically confirmed, first-ever pulmonary

tuberculosis (PTB). From August 2020 to May 2021, we recruited 332 patients aged ≥15 years. PF was evaluated at baseline and at treatment completion. The Wilcoxon signed-rank test was used to compare median PF changes between baseline and treatment completion. A log-binomial regression model was used to determine factors associated with abnormal PF at treatment completion. Statistical significance was set at $p \leq 0.05$. **Results:** Abnormal PF was observed in 142 of 300 (47.3 %) patients who completed the study. Being male (RR [95 % CI] = 1.22 [1.19–2.23]), underweight (RR = 1.49 [1.13–1.95]), having lung cavitation (RR = 1.90 [1.29–2.78]), and lung fibrosis at baseline (RR = 2.16 [1.32–3.53]) were significantly associated with abnormal PF. The median (IQR) FEV_1 at treatment completion was 2.33 L (0.90–4.23 L) and FVC was 3.05 L (1.10–7.50 L), both significantly higher than FEV_1 of 2.18 L (0.20–5.70 L) and FVC of 2.82 L (0.26–7.05 L) at treatment initiation ($p < 0.05$ for both). **Conclusion:** Approximately half of the patients had abnormal PF at treatment completion. Underweight patients, males, and those with lung cavitation at treatment initiation are more likely to have abnormal PF at the end of treatment and may require special attention.

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279. Lema, Y. L., Prodjinotho, U.F., Makasi, C., *et al*... (2025). Cytokine profiles and CD4 counts in HIV-positive individuals with cysticercosis: implications for sex-specific immune responses in co-endemic regions of Tanzania. *Frontiers in Immunology*, Vol. 16. Doi:10.3389/fimmu.2025.1521295.

Abstract

Introduction: The interplay between HIV and *Taenia solium* cysticercosis in co-endemic regions remains poorly understood, particularly regarding the immune responses but is relevant for an effective treatment strategy. This study aimed to investigate the relationship between peripheral cytokine profiles, $CD4^+$ T-cell counts, and cysticercosis infection status in HIV-positive individuals in Tanzania's southern highlands. **Methods:** We conducted a cross-sectional study involving 110 HIV-positive individuals. Cysticercosis was diagnosed using antibody and antigen tests, with neurocysticercosis confirmed by CT imaging. CD4 counts and serum cytokine levels (pro- and anti-inflammatory) were analyzed using multivariate regression and MANOVA, including sex-stratified analyses. **Results:** Among participants, 20.9% tested positive for cysticercosis antibodies, 43.6% for antigens and 20.2% presented with brain cysts, with 10.6% showing active neurocysticercosis. Cysticercosis-positive individuals showed positive correlations between CD4 counts and pro-inflammatory cytokines (e.g., TNF-α, IL-1β), contrasting with negative correlations in cysticercosis-negative individuals. Sex-stratified analysis showed stronger regulatory cytokine responses in males compared to females, particularly involving higher levels of IL-10 and IL-4 indicating sex-specific immune modulation in co-infected individuals. However, overall cytokine profiles were not significantly influenced by CD4 categories or cysticercosis status. **Conclusion:** These results contribute to our understanding of immunological interactions in HIV-cysticercosis co-infection and underscore the need for further research with larger sample sizes to elucidate the clinical implications of these findings. Such studies could inform the development of more effective, sex-personalized treatment strategies for HIV patients in cysticercosis-endemic regions.

280. Lema, Y., Prodjinotho, U.F., Makasi, C., *et al*… (2025). Diagnostic Accuracy of Antigen ELISA and Western Blot IgG for Neurocysticercosis in People Living with HIV/AIDS in Tanzania. *Tropical Medicine and Infectious Disease*, Vol. 10(9). Doi:10.3390/tropicalmed10090246.

Abstract

Background: Neurocysticercosis (NCC) and HIV co-infection frequently occur in sub-Saharan Africa, yet the accuracy of available serological tests for NCC in immunosuppressed patients is uncertain. Methodology: We performed a cross-sectional diagnostic study on 101 people living with HIV from two endemic districts in Tanzania. Participants provided serum for cysticercosis antigen ELISA and Western Blot IgG; any positive result prompted neuroimaging investigation with cerebral computed tomography. NCC was diagnosed according to the 2017 revised Del Brutto criteria based on cCT according to Del Brutto criteria modified to exclude serology. Sensitivity, specificity, and area under the receiver–operating–characteristic curve (AUC) were calculated and adjusted for CD4 count and HIV stage. Two algorithms were compared: parallel testing ("either-test-positive") and sequential screening (Ag ELISA screen, western blot IgG confirm). Results: NCC prevalence was 23%. Western Blot IgG Outperformed Ag ELISA (sensitivity 57% vs. 30%; specificity 87% vs. 86%; AUC 0.73 vs. 0.57). Western blot IgG sensitivity declined to 54% when CD4 < 500 cells µL−1, while Ag ELISA remained low. Western blot IgG positivity independently predicted NCC (adjusted odds ratio 4.1, 95% CI 1.4–11.9); Ag ELISA did not. When we counted a positive if either test was positive (parallel rule), sensitivity rose to 78% and NPV to 87%. When we ran Ag ELISA only if IgG was negative (sequential rule), we saved 70% of IgG strips, kept specificity at 95%, and PPV at 69%, but sensitivity fell to 39%. Conclusions: Western blot IgG is the most reliable single serological test for NCC in PLHIV. Parallel testing increased sensitivity and NPV and may suit better primary-level facilities without routine imaging. Sequential testing achieved high specificity, PPV, and conserved test kits, making it ideal for centers with limited reagents or scanner access. Tiered use of these assays can streamline NCC diagnosis in T. solium endemic, resource-limited settings. ***Keywords:*** *neurocysticercosis; Taenia solium; HIV infections; enzyme-linked immunosorbent assay; western blotting; diagnostic accuracy; sensitivity; specificity; sub-Saharan Africa; resource-limited settings.*

281. Leo, G., Nyamuryekung'e, K., Kahabuka, F. K. (2025). Impact of Traumatic Dental Injuries on Oral Health-Related Quality of Life Among Primary School Children in Dar es Salaam. *Clinical and Experimental Dental Research*, Vol. 11(1). Doi:10.1002/cre2.70105.

Abstract

Objectives: Traumatic dental injuries (TDIs) are a significant concern in pediatric populations, affecting children's oral health-related quality of life (OHRQoL) and overall development. This study aims to examine TDI prevalence, types, risk factors, and impacts on OHRQoL among Tanzanian school children. **Materials and Methods:** Employing a cross-sectional analytical approach, the study assessed TDIs in school children aged 8–10 in Ilala district, Tanzania, using a

multistage cluster sampling technique. Data collection employed structured questionnaires and clinical examinations, applying Ellis and Davey's classification and the Child Perception Questionnaire (CPQ 8–10) for TDIs and OHRQoL assessments, respectively. Statistical analyses included frequency distributions, chi-square, Mann–Whitney and Kruskal–Wallis tests, and binary logistic regression. **Results:** Among 501 participants, 25.1% reported previous oral trauma with a TDI prevalence of 37.5%. Crown fractures were the most common injury (79.8%), with significant associations found between TDI prevalence and inadequate lip coverage ($p = 0.037$) and overjet ($p < 0.001$). Over 60% experienced an oral impact, notably in oral symptoms (52.5%), emotional well-being (25.1%), and functional limitation (22.8%) domains. Children with TDIs showed higher OHRQoL impacts on emotional and social well-being domains. **Conclusions:** The high prevalence of TDIs among Tanzanian school children significantly impacts their OHRQoL, emphasizing the need for comprehensive pediatric dental care approaches that encompass preventive strategies and address the multifaceted aspects of oral health.

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282. Li, J.P., Qiu, S., Tai, G.J., *et al*… (2025). NLRP3 inflammasome-modulated angiogenic function of EPC via PI3K/Akt/mTOR pathway in diabetic myocardial infarction. *Cardiovascular Diabetology*, Vol. 24 (1). Doi.org/10.1186/s12933-024-02541-3

Abstract

Background: Inflammatory diseases impair the reparative properties of endothelial progenitor cells (EPC); however, the involvement of diabetes in EPC dysfunction associated with myocardial infarction (MI) remains unknown. **Methods**: A model was established combining high-fat diet (HFD)/streptozotocin (STZ)-induced diabetic mice with myocardial infarction. The therapeutic effects of transplanted wild-type EPC, *Nlrp3* knockout EPC, and *Nlrp3* overexpression EPC were evaluated. Chip and Luciferase assay revealed CEBPB regulated the transcriptional expression of *Nlrp3* as a transcription factor in EPC stimulated by high glucose (HG) or advanced glycation end products (AGEs). CO-IP results suggested that USP14 selectively suppressed NLRP3 degradation. KEGG enrichment revealed PI3K/ Akt/mTOR signaling showed striking significance in the entire pathway. **Results:** In our study, wild-type, *Nlrp3* knockout, and *Nlrp3* overexpressed EPC, intracardiac injections effectively improved cardiac function, increased angiogenesis, and reduced infarct size in mice with myocardial infarction. However, in the HFD/STZ-induced diabetic mice model combined with myocardial infarction, *Nlrp3* knockout EPC significantly restored angiogenic capacity. Mechanically, CEBPB regulated the transcriptional level of *Nlrp3* as a transcription factor in EPC. Meanwhile, we found that USP14 selectively suppressed NLRP3 protein degradation through the USP motif on the NACHT domain in mediating inflammasome activation. Cardiac functional outcomes in recipient mice after intramyocardial injection of sh*Nlrp3* EPC overexpressing CEBPB or USP14 validated the modulation of EPC function by regulating *Nlrp3* transcription or post-translational modification. Furthermore, KEGG enrichment and validation at the protein levels revealed the PI3K/ Akt/mTOR cascade might be a downstream signal for the NLRP3 inflammasome. **Conclusion:** Our study provides a new understanding of how diabetes affects progenitor cell-mediated cardiac repair and identifies NLRP3 as a new therapeutic target for improving myocardial infarction repair in inflammatory diseases.

283. Lichtenstein, J.D., Niemczak, C.E., Fellows, A., *et. al*… (2025). Central auditory processing is altered after traumatic brain injury in Tanzanian adults. *Frontiers in Neuroscience*, Vol. 19. Doi:10.3389/fnins.2025.1720978.

Abstract

Traumatic brain injury (TBI) damages pathways throughout the brain and is a significant global health concern, particularly in low- and middle-income countries, where the incidence is high and long-term deficits are prevalent. This study explores the utility of central auditory processing (CAP) testing as a marker of previous TBI. Seventy individuals with a history of moderate to severe TBI (msTBI) were matched by age and sex to 46 healthy controls in Dar es Salaam, Tanzania. Participants underwent comprehensive behavioral CAP testing, including tests of speech-in-noise ability, temporal resolution, and dichotic listening. Multivariate logistic regression showed the Triple Digit Test (TDT) ($p < 0.001$) significantly predicted msTBI status, independent of age and peripheral hearing ability. Elastic net modeling supported these findings, highlighting TDT performance as the most robust predictor of msTBI history. A history of msTBI is associated with poorer CAP performance, particularly on speech-in-noise tests. These tests could serve as accessible, resource-efficient tools for assessing brain function related to TBI in clinical and resource-limited settings. Studies in larger, more diverse populations are needed to explore their predictive utility for long-term cognitive outcomes after TBI. ***Keywords:*** *assessment, central auditory processing, LMICs (low- and middle-income countries), Sub-Saharan Africa (SSA), traumatic brain injury*.

284. Linder, N., Nyirenda, D., Mårtensson, A., *et al*… (2025). AI-supported diagnostic innovations for impact in global women's health. *BMJ*, Vol. 391. Doi:10.1136/bmj-2025-086009.

Abstract

Screening and diagnostic methods are essential for secondary prevention, early detection, and appropriate treatment across a range of women's health conditions. Cervical cancer provides a compelling example of how screening and timely diagnosis can substantially improve outcomes and drastically reduce mortality, while also reflecting how women's health priorities have historically been underfunded and under-innovated, especially in low- and middle-income countries (LMICs). The disease is considered preventable through human papillomavirus (HPV) vaccination and various screening modalities, but there has been limited investment in novel diagnostic tools, and inequities in access to evidence based, cost effective screening prevail, particularly in low resource settings.12 Cervical cancer screening ever in lifetime among women aged 30-49 years, for example, was reported to be 84% in high income countries and 11% in low income countries.1Artificial intelligence (AI) supported tools, such as cytological cervical cancer screening, self-sampling combined with HPV testing, or AI analysis of cervix images, show great promise and have been successfully implemented at scale in research and clinical settings.3456 Yet their impact in LMICs remains constrained by persistent health system barriers to implementation and scale-up. Uptake of digital technologies is often hindered by systemic barriers including regulatory uncertainty, infrastructure constraints, and competing economic priorities.78

In parallel, molecular HPV testing capabilities and HPV vaccine coverage remain limited in many LMICs, with approximately one in five eligible girls receiving the full course of preventive immunisation.910 Given the 10-20 year lag time before HPV vaccination has a measurable impact on cervical cancer rates, scalable and effective screening remains critical for early detection. AI models are being studied for prediction of maternal pre-eclampsia, postpartum haemorrhage, and sepsis 1112; AI image analysis methods can aid diagnosis of sexually transmitted and parasitic infections1314; an AI supported approach to breast cancer detection can either reduce radiologists' workload in mammography workflows15 or, in non-specialist healthcare settings, support radiation-free breast thermography for preliminary risk assessment under clinician oversight.1516 Further, smartphone algorithms can screen non-invasively for anaemia,17 and AI enabled point-of-care ultrasonography and cardiotocography show promise for expanded access to obstetric diagnostic measures, such as gestational age, fetal presentation, and fetal heart monitoring1819—all with the potential to reduce avoidable morbidity and mortality. This article focuses on AI based cervical cancer screening, exploring how AI supported diagnostic tools can be better implemented and scaled up in resource limited settings, using cytological screening for cervical cancer and other women's health conditions as illustrative examples.

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285. Liwa, E., Kimambo, A., Orgenes, A., Vuhahula, E., *et al*… (2025). Histomorphological Comparison of Initial and Residual Prostate Cancer Chips at Muhimbili National Hospital, Tanzania. *East Africa Science*, Vol. 7(1). Doi:10.24248/easci. v7i1.117.

Abstract

Background: Residual prostate chips, after initial sampling, provide an opportunity to examine potential differences in histomorphological features of prostate cancer. This study compared the histomorphological characteristics of prostate cancer in the partially sampled versus the residual prostate chips. **Methodology:** This was a cross-sectional analytical laboratory-based study of archived slides of initial samples and residual tissue at the Muhimbili National Hospital's Central Pathology Laboratory (MNH-CPL). **Results:** A total of 162 cases of Transurethral resection of the prostate were included in the analysis. The mean age of the selected cases with transurethral resection of prostate was 69.19 (±9.14) years. In the initial specimen, out of 162 selected cases, 42 (25.9%) were prostate cancer. The specific diagnoses included benign prostatic hyperplasia (BPH) (72.8%), adenocarcinoma (25.3%), Schistosomiasis (1.2%), and squamous cell carcinoma (SCC) (0.6%). For residual specimens, 31.5% were prostate cancer. The specific diagnoses included BPH (66%), adenocarcinoma (30.9%), Schistosomiasis (1.2%) and SCC (0.6%). In both initial (43.9%) and residual (53.8%) specimens, Grade group 5 was prevalent. Most of the initial specimens showed tumor volume of 81 to 90%, and most of the residual tumor volume was greater than 90%. Overall agreement in histological diagnoses between the initial specimen and residual prostate chips was 93.2%, with a kappa strength (κ) of 0.79. For specific diagnoses, the agreement was 97.6%, 91.5%, 100%, and 100% for adenocarcinoma, BPH, schistosomiasis, and SCC Grade 1 with Schistosomiasis, respectively. With the exception of Grade group 5, the remaining Grade groups had a low Kappa value of 0.12. Agreement of tumor volumes was 83.3% with a kappa strength (κ) of 0.79. **Conclusions:** This study showed that there are notable histomorphological differences between initial and residual prostate chips with regard to prostate cancer. Further

research with a larger group of patients and follow-up is recommended to validate these initial findings and their implications for prostate cancer management.

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286. Ljepovic- Zambeli, A., Tungsanga, S., Ghimire, A., *et al*… *(*2025). The potential of kidney transplantation to reduce mortality from chronic kidney disease: a global, cross-sectional, modelling study. *The Lancet Global Health*, Vol. 13(10). Doi:10.1016/s2214-109x (25)00222-0.

Abstract

Background: Globally, the burden of chronic kidney disease and ensuing need for kidney replacement therapy (KRT)—dialysis or kidney transplantation—are increasing. Despite the mortality benefit of transplantation over dialysis, dialysis services are expanding more rapidly than access to transplantation. We aimed to cross-sectionally assess the association between country-level KRT rates and chronic kidney disease mortality to facilitate evidence-based prioritization of KRT modalities. **Methods:** For all countries with publicly available data, we collected income level and gross domestic product per capita (GDP-PC) from the World Bank (data from 2022), age-standardized chronic kidney disease prevalence and mortality from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD; data from 2021), and dialysis prevalence and kidney transplantation incidence from the International Society of Nephrology–Global Kidney Health Atlas (ISN-GKHA) and Global Observatory on Donation and Transplantation (data from 2022). To account for varying chronic kidney disease prevalence among countries, we divided each of the latter three variables by the chronic kidney disease prevalence to obtain national dialysis rates, kidney transplantation rates, and the mortality–prevalence ratio, respectively. We modelled mortality–prevalence ratio as a multivariable function of GDP-PC and KRT rates. We used this model to estimate how increased kidney transplantation rates might affect chronic kidney disease mortality. **Findings:** Among 203 countries and territories with epidemiological data available from both the GBD and ISN-GKHA, median age-standardized chronic kidney disease prevalence was 7·78% (IQR 6·54–9·48%). Data availability was associated with income level ($p<0·0001$). Higher GDP-PC was associated with higher KRT rates ($p<0·0001$ for both dialysis and kidney transplantation) and lower mortality–prevalence ratio ($p<0·0001$). On multivariable analysis, decreases in mortality–prevalence ratio were independently associated with GDP-PC (coefficient –0·258; 95% CI –0·413 to –0·103; $p=0·0031$) and kidney transplantation rates (–574; –1090 to –43·5; $p=0·039$), but not dialysis rates (10·8; –29·5 to –6·27; $p=0·22$). Conservative increases in kidney transplantation rates could avert 290 000 chronic kidney disease deaths annually. **Interpretation:** We provide, to our knowledge, the first compilation of evidence that countries with higher kidney transplantation rates have lower mortality–prevalence ratio, regardless of GDP-PC; dialysis does not have a similar association. GDP-PC-based disparities in data availability, kidney transplantation rates, and mortality–prevalence ratio are expected to worsen with anticipated increases in prevalence of chronic kidney disease. To mitigate this risk, policy makers should leverage international guidelines and partnerships to increase access to safe and ethical transplantation.

287. Lori, J.M., Brighton, M.M., Mwanga, A.H., *et al*... (2025). Correlation between visual and international prostate symptom scores in grading lower urinary tract symptoms for benign prostatic hyperplasia at Muhimbili national hospital. *BMC urology*, Vol. 25(*1*). Doi:10.1186/s12894-025-01797-5.

Abstarct

Background: Benign prostatic hyperplasia (BPH) prevalence varies by ethnicity, with risk increasing in aging men. The visual prostate symptom score (VPSS) offers a practical alternative to the International Prostate Symptom Score (IPSS), especially for elderly patients, but its validation in Tanzania and correlation with IPSS remain underexplored. **Objectives:** This study conducted a comparative analysis of IPSS and VPSS in Tanzanian patients, assessing lower urinary tract symptoms (LUTS) and BPH severity before and after treatment at Muhimbili National Hospital's Urology Department. **Methodology:** This longitudinal observational study included both inpatients and outpatients at MNH in Dar es Salaam, examining the correlation between VPSS and IPSS for grading LUTS in BPH patients aged 40 years and above. Prostate volume was measured using transabdominal ultrasound. Participants completed Swahili versions of the 7-item IPSS and 4-item VPSS. Data were collected before treatment and at the six-month follow-up, with surgical patients and deceased patients excluded from follow-up analysis. Statistical analysis was performed using SPSS version 27. **Results:** In a study of 137 BPH patients with LUTS, aged 62–76 years (median 70), prostate volume significantly decreased from 49.0 mL before treatment to 35.0 mL after treatment. Most patients (94.2%) were literate in Swahili, with significant differences in completing IPSS on the basis of literacy ($p = 0.042$) but no difference in completing VPSS ($p = 0.999$). Both the IPSS and VPSS improved significantly after treatment, with strong correlations before ($r = 0.648$) and after treatment ($r = 0.732$), confirming their reliability in assessing LUTS severity. **Conclusion:** This study showed that VPSS effectively evaluates LUTS severity in BPH patients, correlating well with IPSS, even in illiterate patients. VPSS's reliability suggests its utility in routine practice, enhancing symptom monitoring and treatment outcomes in BPH management.

288. Luoga, P., Abihudi, S.A., Adam, J., *et al*… (2025). Prevalence and factors associated with intimate partner violence among women in Tanzania: evidence from Tanzanian demographic and health survey 2022. *BMC Women's Health*, Vol. 25(235). Doi:10.1186/s12905-025-03760-w

Abstract

Background: Intimate partner violence (IPV) remains a pervasive issue in Tanzania, impacting the physical, mental, and emotional well-being of women across the country. Despite the existence of legal frameworks aimed at protecting women's rights, IPV persists in Tanzania. Understanding the magnitude and factors associated with IPV among women provides valuable insights that can be used to shape policies and interventions targeted at preventing and addressing IPV in the country. However, there is a paucity of evidence on the prevalence and factors associated with IPV nationwide. Therefore, this study is timely for addressing this gap in Tanzania. **Methods:** The study used a nationally representative secondary data that employed a cross-sectional design. Data

for the current study were extracted from the 2022 Tanzania Demographic and Health Survey for women aged 15–49 years. A weighted sample of 4503 ever married or ever partnered women aged 15–49 years was used. The outcome variable was IPV status categorized into binary responses yes/no, while independent variables were socio-demographic and health related characteristics. Data were analysed using descriptive analysis, bivariable and multivariable logistic regression models. A threshold of p-value < 0.05 was used to determine statistically significant factor. The strength of the association was assessed using the adjusted odds ratio (aOR) along with its corresponding 95% confidence interval (CI). **Results:** The overall prevalence of IPV among women of reproductive age 15–49 years in Tanzania was 38.9%. The multivariable logistic regression results revealed that women who are working (aOR = 1.4,95%CI:1.2,1.7) and those whose husband/partner drinks alcohol (aOR = 2.9,95%CI: 2.4, 3.5) had higher odds of experiencing IPV compared to their counterparts. Conversely, protective factors include women's secondary and higher education level (aOR = 0.7,95%CI:0.5,0.9) and residing in the Southern zones (aOR = 0.4,95%CI:1.5,3.9). **Conclusion:** The prevalence of IPV among women in Tanzania remains high compared to the global average of 30%. This was mostly associated with women's employment status, and women married/cohabiting with alcohol consumers. The government should implement community-based educational programs to raise awareness about IPV and dedicate more efforts like raising the tax on all alcoholic beverages to controlling alcohol consumption among men as a strategy to combat IPV in society.

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289. Luoga, P., Adam, J., Abihudi, S. A. (2025). Prevalence and determinants of contraceptive use among men in Tanzania: Analysis of the 2022 demographic and health survey. *PLOS Global Public Health*, Vol. 5(9). Doi: 10.1371/journal.pgph.0005226.

Abstract

Globally, contraceptive use is an important strategy in fighting maternal and neonatal deaths. The spacing and avoiding unplanned pregnancies while providing women with enough time recovering her health and their newborns to grow. However, the use of contraception in developing countries, including Tanzania, is low and is worse among men, culturally regarded as the dominant decision makers in sexual relationships. This study intended to assess the prevalence and determinants of contraceptive use among Tanzanian men using the Tanzania Demographic and Health Survey (TDHS) 2022. The study analyzed secondary data collected using a cross-sectional study design of weighted 5763 men obtained from the TDHS 2022. A dependent variable was contraceptive use and independent variables were man's demographic and socio-economic characteristics. Bivariate and multivariable analyses were conducted, and a p-value<0.05 was determined to be a significant factor. The prevalence of contraceptive use among Tanzanian men is 26%. The logistic regression showed men aged 45–49 years (aOR=3.08, 95% CI = 1.90-5.01) had higher odds of using a contraceptive compared to men aged 15–19. Men with higher education (aOR=2.94, 95% CI = 1.79-4.84) had higher odds of using a contraceptive compared to those with informal education, from rich quantile (aOR=1.42, 95% CI = 0.92-1.46) had higher odds compared to those from the poor. Men with five and above children (aOR=1.62, 95% CI = 1.08-2.43) had higher odds to use contraceptive compared to those with no child. Those desired no more child had odds of 1.4 times higher to use contraceptive (aOR=1.40, 95% CI = 1.05-1.88), men who heard family planning on

radio (aOR=1.39, 95% CI = 1.16-1.66) had higher odds of using contraceptive to those who did not. The contraceptive use among Tanzanian men is generally low with a prevalence rate of only 26% and was associated with man's age, education level, wealth index, number of children, and occupation. More tailored programs targeting men to increase their education level, particularly health education is crucial in increasing men's contraceptive use in Tanzania

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290. uoga, P., Kagaigai, A., Anaeli, A., *et. al*… (2025). Determinants of healthcare access among women aged 15-49 years in Tanzania: a population-based cross-sectional survey. *Journal of Health, Population and Nutrition*, Vol. 45(23). Doi: 10.1186/s41043-025-01188-4.

Abstract

Background: Globally, access to healthcare among women of reproductive age is among top most health agenda. In line with the endeavor, the government of Tanzania strive to ensure healthcare is accessible to every community member particularly women of reproductive age (15–49 years). However, there are limited scientific evidence on the proportion of women aged 15–49 who can access and the determinants of healthcare services in Tanzania. This study intended to fill the gap. **Methods**: In this study, we analysed secondary information of a weighted sample 15,254 women aged 15–49 years collected using cross-sectional design during the 2022 Tanzania Demographic and Health Survey (TDHS). The binary dependent variable was healthcare access status and independent variables were women's social demographical characteristics. Descriptive analysis and multivariable modified Poisson regression analysis were performed. The p-value < 0.05 at 95% was set to determine the significant determinant. **Results:** The proportion of women with access to healthcare in Tanzania, stand at 50.2%. After controlling for other covariates, the modified Poisson regression showed that women with secondary and higher education level (Adjusted Prevalence Ratio (APR);1.21,95%CI:1.12,1.30), women who are covered by health insurance (APR;1.18,95%CI:1.11,1.26), belonging to richest households (APR;1.62,95%CI:1.45,1.80), residing in southern zone (APR;1.32,95%CI:1.22,1.42) and women living in union (APR;1.10,95%C:1.05,1.16); had higher prevalence ratio of healthcare access compared to their counter parts. "Conversely, negative determinants of healthcare access included being aged 35–49 years (APR; 0.92; 95% CI: 0.88, 0.97), living in households with 5–6 members, and residing in rural areas (APR; 0.78; 95% CI: 0.73, 0.83). These groups had a lower prevalence of healthcare access compared to their counterparts. **Conclusion**: Only half of Tanzanian women of reproductive age had adequate healthcare access. Its positive determinants included having secondary and above education level, being covered by health insurance, belonging to richest households, residing in southern and coast zones and living in union. Negative determinants included residing in rural, coming from poor households and having no formal education. As a motive toward universal health coverage in Tanzania, the government should design targeted health interventions focusing on poor women in rural areas with low levels of education to improve the healthcare access for all.

Keywords: *Healthcare access, Women, Reproductive age, DHS, Tanzania*

291. Luoga, P., Mahiti, G.R., Kapinga, O., *et al*… (2025). Socioeconomic and geographical disparities in disability distribution among Tanzanian population: insights from the 2022 demographic and health survey and malaria indicator survey. *BMC Public Health*, Vol. 25(1). Doi.:10.1186/s12889-025-23152-x.

Abstract

Background: Disability is a significant public health issue globally, especially in sub-Saharan Africa, including Tanzania, where its prevalence is high. Effective health service planning requires reliable data on disability prevalence and distribution. However, Tanzania lacks sufficient empirical data, hindering social service planning. This study aims to examine socioeconomic and geographical disparities in disability among Tanzanians aged 15–95 years. **Methodology:** This study utilized secondary data from the 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS), comprising a weighted sample of 58,425 individuals. The dependent variable was disability status, while independent variables included demographic and socioeconomic factors. Descriptive analysis, chi-square tests, and modified Poisson regression were employed to assess associations, with *p*-values < 0.05 indicating significance. **Results:** The overall disability prevalence was 11%. Older individuals (≥ 50 years) had a higher prevalence ratio (Adjusted prevalence ratio (APR): 3.85; 95% CI: 3.33, 4.52) compared to those aged 15–29. Females had a higher prevalence ratio (APR: 2.67; 95% CI: 2.63, 2.71) than males. Individuals with secondary education (APR: 2.58; 95% CI: 2.51, 2.65) and separated/widowed individuals (APR: 2.91; 95% CI: 2.74, 3.09) were more likely to report disability. Wealthiest households (APR: 2.74; 95% CI: 2.75, 2.9) and those with health insurance (APR: 2.83; 95% CI: 2.86, 2.99) had higher disability prevalence. Regional disparities showed the Northern zone had a higher prevalence ratio (APR: 2.77; 95% CI: 2.87, 3.00) compared to the Lake zone. **Conclusion:** This study highlights significant disability prevalence in Tanzania, with older age, female gender, higher education, wealth, and marital separation as key risk factors for disability. The counterintuitive findings on wealth and education may indicate improved access to diagnosis. Regional disparities warrant further investigation. These findings emphasize the need for targeted interventions and further research into underlying mechanisms to improve support systems for vulnerable populations.

292. Luoga, P., Paulo, H.A., Mbishi, J.V., *et al*… (2025). Prevalence and determinants of female genital mutilation: current insights from ten at-risk countries in Sub-Saharan Africa. *BMC Public Health*, Vol. 25(1031). Doi: 10.1186/s12889-025-22279-1

Abstract

Background: In Sub-Saharan Africa (SSA), several women and children are significantly affected by female genital mutilation (FGM), but there are limited studies on the prevalence and determinants of FGM due to a combination of factors, including cultural-political barriers, funding constraints, and ethical concerns. This study aims to address this gap by examining the current prevalence and determinants of FGM in ten at-risk countries in SSA. **Methods:** This cross-sectional study utilized Demographic and Health Survey (DHS) data of 129,182 women aged 15–49 years from ten at-risk countries. The included countries are Guinea, Mali, Sierra Leone, Burkina

Faso, Gambia, Mauritania, Ethiopia, Nigeria, Chad, and Liberia. Data were sample-weighted, and our dependent variable was mutilation status, whereas women's socio-demographic characteristics constituted the independent variables. Multivariable modified Poisson regression analyses were performed, with a p-value threshold of < 0.05 used to determine statistical significance. **Results:** The pooled prevalence of FGM across the ten Sub-Saharan African (SSA) countries was 53.5% (95% CI: 52.3–54.7). Older women demonstrated a higher likelihood of having undergone mutilation, with adjusted prevalence ratios (APRs) increasing from 2.69 (95% CI: 2.66–2.75) among women aged 20–24 to 2.86 (95% CI: 2.80–2.92) among those aged 45–49. Women with no formal education were significantly more likely to have undergone mutilation compared to those with secondary education or higher (APR = 2.53, 95% CI: 2.51–2.56). Rural residency was strongly associated with a higher prevalence of FGM (APR = 2.59, 95% CI: 2.56–2.61), as was unemployment compared to active employment (APR = 2.56, 95% CI: 2.54–2.58). Furthermore, women from poorer households were more likely to have undergone mutilation compared to those from wealthier households (APR = 2.66, 95% CI: 2.62–2.69). **Conclusion:** The overall FGM prevalence of 53.5% indicates a significant problem. Urgent interventions are needed and should consider significant factors including older age, lower education level, rural residency, women unemployment and poverty.

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293. Lwenge, C. G., Mahiti, G. R., & Paulo, H. A. (2025). Evaluation of health laboratory ethical compliance among laboratory practitioners in Kinondoni District, Tanzania. *BMC Health Services Research*, Vol. 25(1). Doi:10.1186/s12913-025-12556-5

Abstract

Background: Laboratory science rears a special pattern in medicine, which helps promote different biological phenomena, which will aid in the management of disease through analysis of samples and laboratory tests. Laboratory practitioners provide results that are used to make critical decisions. The aim of the study was to evaluate how health laboratory practitioners understand and comply with the laboratory ethical conduct as per ISO 15189:2012. **Methodology:** An exploratory study design that involved a qualitative approach for data collection. A total of 16 laboratory personnel who were purposively selected participated in the study. Primary data was collected through in-depth interview guided by semi-structured questions. These interviews were audio recorded, and the researcher verified the recordings for accuracy and completeness. Data saturation was reached after interviewing 14 laboratory practitioners. Additionally, non-participatory observation was conducted to complement the data. The audio recordings were transcribed into text, translated into English, and analyzed using a thematic analysis method with a deductive approach, guided by pre-determined themes. NVivo 12 software was used to facilitate the analysis. **Results:** Despite most of the laboratory practitioners claiming to be aware of and follow laboratory ethical conduct, there were several instances of misconduct that still exist in the laboratories, e.g, mislabeling and miscommunication with clients. study has brought about valuable knowledge on ethical conduct among laboratory practitioners, the importance of abiding by ethical standards while performing laboratory activities, and the impact of these on the results. Prior research suggests that ethical compliance should be reinforced through institutional policies, leadership commitment, and accountability frameworks rather than relying solely on self-

regulation. Laboratories should prioritise embedding integrity as a core institutional value through structured ethical guidelines, leadership-driven ethical culture, and continuous professional education. **Conclusion:** There were still some incidences of information breaching that still happen to some of the laboratories. More frequent trainings were of concern along with the enhancing supportive supervision and accountability mechanisms to address ethical breaches through formalized corrective actions rather than informal reminders, integrate ethical guidelines into laboratory management systems, ensuring routine monitoring and enforcement rather than relying on self-regulation establish structured and mandatory ethical training programs with clear attendance or each laboratory staff to attend all ethical trainings with a call to the responsible Laboratory practitioners board, policies should enforce accountability by implementing appropriate penalties for practitioners who fail to comply with ethical standards.

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294. Lweno, O., Reynolds, V.S., Barberio, M.D, *et al*... (2025). Single-blinded, stratified, dose-ranging trial to assess pharmacokinetics and identify optimal dose of vitamin B12 in pregnancy in Tanzania. *Gates Open Research*, Vol. *8*, 95. Doi: 10.1016/j.cdnut.2025.106842

Abstract

Background: Vitamin B12 is an essential cofactor for two enzymes that have critical functions in pregnancy, both for maternal health and fetal development. However, the optimal supplemental dosage and its correlation with vitamin B12 status during pregnancy remain inadequately understood due to limited data. **Methods:** This is a single-blinded, stratified, dose-ranging trial of vitamin B12 supplementation that will be conducted at the Ifakara Health Institute Bagamoyo Clinical Trial Unit in Bagamoyo, Tanzania. We will enroll 40 pregnant participants (gestational age 25–28 weeks) and 10 non-pregnant participants, stratified based on baseline vitamin B12 status (sufficient and insufficient). Pregnant participants are sequentially assigned to one of three doses: 2.6, 10, and 50 μg for four weeks. At the highest dose, pregnant participants are randomized to receive 50 μg once a day (Q24H) or 25 μg twice a day (Q12H). The two lower doses (2.6 and 10 μg) are given Q24H. non-pregnant participants will receive 2.6 μg Q24H. The trial includes a four-week in-patient phase for daily assessment and controlled feeding, with pregnant participants assessed once postpartum. Primary endpoints include serum B12 concentrations, holotranscobalamin concentrations, and their ratio after four weeks of daily supplementation. Discussion: This study aims to deepen our understanding of nutrient requirements in pregnancy by generating high-quality, high dimensional data. We will answer questions about how pre supplementation vitamin B12 status and dosage impact vitamin B12 saturable absorption and steady-state over the course of four weeks. Limitations include our inability to assess pharmacokinetic changes across gestation, the impact of vitamin B12 status or supplementation on pregnancy and fetal/newborn health, comparing vitamin B12 effects between pregnant and non-pregnant individuals above the recommended dietary allowance (2.6 μg), and comparing Q12H and Q24H dosing at 50 μg. This is the first controlled feeding study to be conducted in sub-Saharan Africa.

295. Lweno, O., Reynolds, V.S., Barberio, M.D., *et. al*… (2025). Single-blinded, stratified, dose ranging trial to assess pharmacokinetics and identify optimal dose of vitamin B12 in pregnancy in Tanzania. *Gates Open Research*, Vol. 8(95). Doi:10.12688/gatesopenres.15991.

Abstract

Background: Vitamin B12 is an essential cofactor for two enzymes that have critical functions in pregnancy, both for maternal health and fetal development. However, the optimal supplemental dosage and its correlation with vitamin B12 status during pregnancy remain inadequately understood due to limited data. **Methods:** This is a single-blinded, stratified, dose-ranging trial of vitamin B12 supplementation that will be conducted at the Ifakara Health Institute Bagamoyo Clinical Trial Unit in Bagamoyo, Tanzania. We will enroll 40 pregnant participants (gestational age 25–28 weeks) and 10 non-pregnant participants, stratified based on baseline vitamin B12 status (sufficient and insufficient). Pregnant participants are sequentially assigned to one of three doses: 2.6, 10, and 50 µg for four weeks. At the highest dose, pregnant participants are randomized to receive 50 µg once a day (Q24H) or 25 µg twice a day (Q12H). The two lower doses (2.6 and 10 µg) are given Q24H. non-pregnant participants will receive 2.6 µg Q24H. The trial includes a four-week in-patient phase for daily assessment and controlled feeding, with pregnant participants assessed once postpartum. Primary endpoints include serum B12 concentrations, holotranscobalamin concentrations, and their ratio after four weeks of daily supplementation. **Discussion:** This study aims to deepen our understanding of nutrient requirements in pregnancy by generating high-quality, high dimensional data. We will answer questions about how pre-supplementation vitamin B12 status and dosage impact vitamin B12 saturable absorption and steady-state over the course of four weeks. Limitations include our inability to assess pharmacokinetic changes across gestation, the impact of vitamin B12 status or supplementation on pregnancy and fetal/newborn health, comparing vitamin B12 effects between pregnant and non-pregnant individuals above the recommended dietary allowance (2.6 µg), and comparing Q12H and Q24H dosing at 50 µg. This is the first controlled feeding study to be conducted in sub-Saharan Africa. ***Keywords:*** *Vitamin B12 Deficiency, Pregnancy, Controlled Feeding, Randomized Trial, Tanzania.*

296. Lyatula, Z.M., Ottaru, T.A., Mwanga, H.H. (2025). Knowledge on HIV postexposure prophylaxis and associated factors among healthcare workers in Kigoma region, Tanzania. *Scientific Reports*, Vol. 15(1).

Abstract

Following exposure to blood and body fluids. However, few studies have examined the level of knowledge on HIV PEP and the associated factors among this at-risk population of HCWs in Tanzania. The aim of this study was to assess the level of knowledge on HIV PEP and associated factors among HCWs in Kigoma Region, Tanzania. A cross-sectional study was conducted among HCWs at Kigoma Regional Hospital, Kibondo District Hospital and Kasulu Town Council Hospital from November to December 2022. Data was collected using interviewer-administered questionnaire. A total of nine questions were used to assess knowledge on HIV PEP. The total score was calculated by summing the correct responses, with a maximum possible score of 17.

Knowledge of HIV PEP was classified as inadequate (score < 11, moderate (score 12–14), and adequate (score > 14). Bivariate analysis and multivariable logistic regression models were used to assess the association between the level of knowledge on HIV PEP (inadequate/moderate (score ≤ 14) vs. adequate (score > 14) and the independent variables. Data analysis was performed using Statistical Package for Social Scientists version 23.0 and p-value < 0.05 was considered statistically significant. Out of 377 study participants [female (200, 53.1%), mean age of 38.7 ± 9.1 years, nurse 129 (34.2)] the majority 234 (62.1%) had adequate knowledge on HIV PEP. HCWs from Kasulu Town Council Hospital (AOR = 1.4; 95% CI: 1.02–8.73) and those from facilities with HIV PEP services (AOR = 3.9; 95% CI: 2.41–6.29) had significantly higher odds of having adequate knowledge on HIV PEP. A sizeable proportion of study participants had adequate knowledge on HIV PEP. Working in Kasulu Town Council Hospital and the presence of HIV PEP services within the facility were associated with adequate knowledge on HIV PEP. Healthcare authorities in the Kigoma region are advised to strengthen the implementation of formal HIV PEP training, timely access to HIV PEP service, and dissemination of updated information, education, and communication materials alongside protocol guidelines to improve the knowledge of HCWs on HIV PEP in all healthcare facilities.

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297. Lyimo, H.I., Gega, Z.D., Mashaka, A.B., *et al.*.. (2025). Giant Breast Myofibroblastoma: A Rare Case of Benign Breast Tumor in a Postmenopausal Woman. *Case Reports in Surgery, 2025*(1). Doi.org/10.1155/cris/9930606.

Abstract

Introduction" Breast myofibroblast Oma (MFB) is a relatively rare benign tumor that mimics the clinical presentation of malignant tumors of the breast. It has various morphologic variants that can be accurately diagnosed based on histopathology and immunohistochemistry staining. We report a case of MFB in a menopausal woman for pertinent clinical consideration and management. **Case Presentation:** We report a case of a 57-year-old Tanzanian woman, who presented with a huge right breast mass for 1 year. Initial radiological findings were inconclusive, however, the tissue specimen for histology and immunohistochemical (IHC) confirmed the diagnosis. A simple mastectomy was thereafter performed as a curative therapy. **Conclusion:** This case presentation underscores the importance of considering MFB as a potential differential for breast tumors especially in menopausal women. Tissue biopsy for histopathology and IHC staining form the cornerstone for accurate diagnosis and appropriate management.

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298. Lyimo, M., Ntissi, H.H., Juma, A.B., *et al*… (2025). Seropositivity of Transfusion-Transmissible Infections Among Blood Donors in the Eastern Zone of Tanzania During the Early COVID-19 Period: *A Cross-Sectional Analysis*. *Cureus,* Vol. 17(12). Doi:10.7759/cureus.100450.

Abstract

Background: Transfusion-transmissible infections (TTIs), such as human immunodeficiency virus (HIV), hepatitis B virus and middleincome countries. The COVID-19 pandemic has disrupted blood donation activities globally, raising concerns about its impact on donor screening outcomes. This study assessed TTI seropositivity among blood donors in the Eastern Zone of Tanzania during the early COVID-19 period. **Methods:** A retrospective cross-sectional analysis was conducted using donor records collected between January and July 2020 at the Eastern Zone of the Blood Transfusion Centre. Screening adhered to the national and WHO recommended algorithms using chemiluminescent immunoassays. Donor characteristics and TTI prevalence were summarized descriptively. Logistic regression was used to identify factors associated with HBV seropositivity, as hepatitis B had the highest prevalence and sufficient event counts to support stable multivariable analysis compared with other TTIs. **Results:** Among 16,767 donors with complete records, 1,774 (10.7%) tested positive for at least one TTI. HBV was the most frequent infection (897, 5.4%), followed by syphilis (453, 2.7%), HIV (311, 1.9%), and HCV (207, 1.2%). Coinfections were rare: HBV-HIV (35, 0.21%), HBV-syphilis (27, 0.16%), and HBV-HCV (15, 0.09%). Blood collection volumes decreased sharply in April-May 2020 but recovered by July. Monthly HBV and TTI seroprevalence showed stable descriptive trends (4.1-6.1%), with no apparent increase during low-donation months. Independent predictors of HBV seropositivity included male sex (AOR 1.7, 95% CI 1.4-2.3) and age 30-39 years (AOR 3.2, 95% CI 2.1-4.8). **Conclusion:** Despite disruptions in blood collection, TTI seroprevalence remained stable during the early COVID-19 period, suggesting resilience in donor selection and screening procedures. Strengthening donor recruitment and maintaining rigorous laboratory screening remain essential to safeguard the blood supply in Tanzania.

299. Lynda. C. (2025). Surveying the Historical Legacies: Contemporary Governance Challenges in Tanzania. *Pan-African Research Journal Africa,* Vol. 1(1). Doi:10.5281/zenodo.18441863.

Abstract

Background: Contemporary governance challenges in Tanzania are often examined without sufficient historical context. This survey research argues that understanding these challenges requires an analysis of historical legacies, including pre-colonial structures, colonial administration, and post-independence socialist policies. **Purpose and objectives:** The purpose is to systematically survey and analyse the perceived historical legacies influencing governance challenges in Tanzania from 2021 to 2026. Its objectives are to identify which historical periods are viewed as most impactful and to delineate the specific governance areas they affect. **Methodology:** A nationally representative survey of 1,200 Tanzanian adults was conducted in late 2025, using stratified random sampling. The questionnaire employed Likert-scale and open-ended questions to gauge perceptions on historical influences across five governance domains: leadership accountability, public participation, resource distribution, gender equity, and institutional trust. **Findings:** A key insight is the strong perceived link between centralised colonial and post-independence systems and contemporary constraints on local-level participation. Specifically, 68% of respondents agreed that historical centralisation 'significantly' or 'very significantly' hinders grassroots decision-making. Pre-colonial communal models were frequently cited as a

missed opportunity for more inclusive frameworks, with notable implications for women's leadership pathways. **Conclusion:** The survey confirms that Tanzanians perceive a direct relationship between historical administrative legacies and current governance impediments, particularly regarding decentralisation and citizen engagement. Historical legacies are viewed as actively shaping the present governance landscape. **Recommendations:** Policymakers should design civic education programmes that explicitly address these historical continuities. Decentralisation reforms should be informed by studies of both pre-colonial participatory systems and the entrenched patterns of centralisation that followed, with a specific focus on enhancing gender-inclusive governance. **Keywords:** Historical Legacies, Governance Challenges, East Africa, Survey Research, Post-Colonial State,Political accountability and institutional memory.

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300. Machibya, F., Mlangwa, M., Elius, A., *et al*… (2025). Relationship Between Third Molar Impaction Patterns and Facial Types in Tanzanian Adults. *Iranian Journal of Orthodontics*, Vol. 20(2). Doi:10.22034/ijo.2025.2054229.120.

Abstract

Aim: To determine the prevalence and distribution of third molar impaction patterns using the Pell and Gregory classification and to examine their association with facial pattern among Tanzanian patients. **Methods:** This analytical cross-sectional study included 258 participants (147 females, 111 males) with mean age of 33.38±14.38 years who underwent clinical examination, lateral facial photography, and panoramic radiography. Third molar impactions were classified according to the Pell and Gregory system. Data were analyzed using chi-squared and modified Poisson regression applied to assess associations. P-value<0.05 was considered as significant. **Results:** The prevalence of third molar impaction was 61.6%. Class II impaction was most common (28.3%), followed by Class I (27.5%) and Class III (5.8%). Most participants had a Class I facial pattern (66.3%). There was a significant association between facial pattern and third molar impaction (P=0.039), but no significant relationship was found between third molar impaction and sex, overjet, or anterior crossbite. **Conclusion:** Third molar impaction is highly prevalent among Tanzanian orthodontic patients, with Class II impaction being the predominant type. Although facial pattern showed some association with impaction class, no significant correlation was observed with malocclusion variables. ***Keywords:*** *Facial Profile Malocclusion Orthodontics Tooth Impaction Third Molar Subjects*

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301. Machibya, F., Mseke, M., Mlangwa, M. (2025). Prevalence of Malocclusion and Dental Anomalies in Tanzanian Orthodontic Patients. *Medical Journal of Zambia*, Vol. 52(3). Doi: 10.55320/mjz.52.3.638.

Abstract

Background: Dental anomalies often result in malocclusion, and may complicate orthodontic treatment. Information about the relationship between dental anomalies and malocclusion is scarce. The current study aimed to examine the prevalence of malocclusion and dental anomalies

in Tanzanian orthodontic patients. **Methods:** This was an analytical cross-sectional study, involving orthodontic patients. Clinical and radiographical examinations were done to all participants. The relationship between malocclusion and dental anomalies was assessed by using a Chi-square test. The p-value for statistical significance was set at $p<0.05$, with 95% Confidence Interval. **Results:** A total of 390 orthodontic patients were enrolled. Majority of the participants (55.9%) were between 12-18 years. Most of the participants had Class I malocclusion (85.6%). Overall prevalence of dental anomalies was 45.9%, with 37.4% having one dental anomaly and 8.5% having more than one. Ectopic eruption was the commonest dental anomaly (observed in 18.2% of participants), it was recorded more in males (24.3%) than in females (14.9%) ($p=0.02$), and more in younger than in older participants (24.8% versus 10.5%, $p=0.01$). Tooth impaction was the second commonest anomaly (observed in 11.8% of the participants), it was recorded more in younger patients (15.6%) than in older ones (7.0%) ($p=0.01$). The dental anomalies had no significant associations with malocclusion. **Conclusion:** Most of the participants had Class I malocclusion, almost half had at least one dental anomaly. More males than females had ectopic eruptions, and more younger participants than older ones had tooth impaction. There was no significant association between malocclusion and dental anomalies. Clinicians should consider the occurrence of dental anomalies, when managing orthodontic patients.

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302. Machibya, F.M., Msungu, P.J., Mlangwa, M.M. *et al*... (2025). Comparison of Pain Experience among Patients Using Super Elastic Nickel-Titanium Vs Copper Nickel-Titanium Archwires During Alignment Stage. *Orthodontic Journal of Nepal*, Vol: 15(1). Doi: 10.3126/ojn. v15i1.74681.

Abstract

Introduction: Pain and discomfort associated with teeth movement during the early phase of orthodontic treatment are major concerns for many orthodontic patients. The aim of this study was to compare the pain experience among patient undergoing orthodontic treatment using Super Elastic NiTi (SE NiTi) and Copper NiTi (Cu NiTi) arch-wires during the alignment phase. **Materials and Methods:** A prospective randomized study was carried out among patients who were in the alignment stage of fixed orthodontic treatment, using two different types of arch wires, SE NiTi or Cu NiTi. Eight-six participants were recruited conveniently in the study, and randomly allocated to either of the study groups. Fixed orthodontic treatment was then initiated with 0.014-inch archwire in both groups. Participants were followed for pain assessment using a modified McGill Pain Questionnaire with Visual Analogue Scale (VAS) for the duration of 7 days. Data were analyzed by SPSS Statistics version 25 with a p-value set at <0.05. Pain comparison between two groups was done using Wilcoxon Signed Rank test and Mann Whitney U test. **Results:** Three participants were lost to follow up and one participant was omitted from the analysis. Therefore, total of 82 participants were analyzed, 41 participants from each of the study group. Participants from both groups reported pain experience during the initial phase of fixed orthodontic treatment. The pain experience was highest 6 to 12 hours after insertion of the initial archwires in both groups. The majority of the participants reported a gradual decrease in pain intensity over time, with the rate of decline been relatively faster in SE-NiTi group. **Conclusion:** There was no significant difference between SE NiTi and Cu NiTi in pain experience.

303. Magelewanya, A.M., Malaki, B., Ndile, M. (2025). Hypertensive Medication adherence status and associated factors among patients attending a hypertensive clinic at Jakaya Kikwete Cardiac Institute, Dares Salaam. Tanzania Journal of Health Research, 26(1). Doi:10.4314/thrb. v26i1.5.

Abstract

Background: Effective hypertension control depends on consistent adherence to antihypertensive medications. In Tanzania, little is known about the adherence status to antihypertensive medications and their associated factors. We determined adherence status and associated factors among adult patients attending a hypertensive clinic at a tertiary hospital in Dar es Salaam. **Methods:** This was a cross-sectional study. Simple random sampling was used to recruit 379 hypertensive patients who were prescribed one or more regular antihypertensive medications for at least a month. A self-reporting questionnaire was used to measure medication adherence. Data were analyzed using SPSS computer software version 20. Descriptive statistics were used to summarize the data. The associations of variables with medication adherence were determined using the chi-square test and logistic regression. **Results:** The proportion of antihypertensive medication adherence among the patients was 55.40%. Use of traditional medicine (AOR=0.08, 95% CI=0.04-0.18), believing that prayers can cure hypertension (AOR=0.15, 95% CI= 0.09-0.27), Having health insurance (AOR=2.97, 95%CI=1.07-8.30) and pharmacy service (AOR=0.57, 95%CI= 0.33-0.98) were significantly associated with adherence to antihypertensive medications. **Conclusion:** The study showed that only 55.40% of patients had good adherence to antihypertensive medication, which was observed to be low. Factors such as the use of traditional medicine, believing that prayer can cure hypertension, unsatisfactory experience with pharmacy services, and having no health insurance were significantly associated with poor adherence to antihypertensive medications. To improve hypertension control among patients, healthcare providers and policymakers should address these factors by identifying and implementing workable strategies that are patient.

304. Magenge, A.H., Ndile, M.L., Furia, F. (2025). Family caregivers' experience of caring for patients undergoing hemodialysis: A qualitative study at Muhimbili National Hospital in Dar es Salaam, Tanzania. *Plos one*, Vol. 20(5). Doi: 10.1371/journal.pone.0321732.

Abstract

Background: The number of patients with chronic kidney disease requiring hemodialysis services is growing in Tanzania. Considering patients undergoing hemodialysis are outpatients, family caregivers fill the gap of caring and support during the lifelong treatment process. Limited information exists especially in the context of Tanzania regarding the challenges the family caregivers encounter during their involvement in the caring process. This study aimed to explore family caregivers' experience of caring for patients undergoing hemodialysis at Muhimbili National Hospital, Dar es Salaam, Tanzania. **Methods:** A qualitative study employing phenomenological design was conducted. Fourteen family caregivers of patients receiving hemodialysis services at Muhimbili National Hospital were purposively selected. Semi-structured

in-depth interviews were used for data collection. Interviews were audio-recorded and transcribed verbatim. Data were analyzed following Braun and Clarke's six phases of thematic analysis. **Results:** The study uncovered four key themes from fourteen interviews. The themes were: 1) Family caregivers and providers' interaction, focusing on interpersonal and professional relationships 2) The status of dialysis treatment, describing access and availability of resources for the provision of hemodialysis services 3) Impact of long-term care, touching issues of emotional, physical and social-economic impact to family members and 4) Coping with caring, describing internal and external mechanisms family members use to adjust to demanding situation of caring their loved ones. **Conclusion:** Caring for patients receiving hemodialysis treatment burdens family caregivers, impacting their livelihood and resources. Healthcare providers need to build a close working relationship with family caregivers to understand their challenges and needs and help build their coping capacities. Additionally, dialysis service coverage issues such as affordability, accessibility, and availability need to be addressed to reduce the caring burden on family caregivers.

305. Magili, P.F., Massawe, I.S., Mushi, V.P. e*t al*… (2025). The traditional healer said,'I had a genie that scared me in my eyes, and that is why I fall: An ethnographic study in Mahenge, Tanzania. *Epilepsy & Behavior*, Vol. 170. Doi: 10.1016/j.yebeh.2025.110463.

Abstract

Background: In many low-income countries, individuals with epilepsy often seek traditional healers as their initial source of treatment following seizure onset. However, their experiences with traditional healing remain insufficiently explored. This study examines the perceptions and experiences of people with epilepsy regarding traditional healing practices in Mahenge, Tanzania. **Methods:** A culturally specific ethnographic approach, focusing on oral history to capture rich contextual narratives, was employed. A total of 45 oral history interviews were conducted with persons with epilepsy from 21 villages in Mahenge. Participants were selected based on the criteria of being at least 18 years old, having epilepsy, and being able to recount their experiences in Swahili, the primary language spoken in the region. Data were manually analyzed using thematic analysis. **Results:** Traditional healers frequently attribute epilepsy to supernatural causes such as curses and witchcraft, drawing connections between patients' seizure onset and past events believed to have triggered the condition. Alongside their treatments, healers impose restrictions on persons with epilepsy, which can be difficult to adhere to and may serve as a justification for treatment failure. Additionally, some individuals reported experiencing physical, emotional, and even sexual harassment during their interactions with traditional healers. **Conclusion:** There is a firm reliance on traditional healing practices for epilepsy, where cultural beliefs and ritual practices jeopardise diagnosis and care for people with epilepsy. Raising awareness about epilepsy and its management, as well as the rights of people with epilepsy among traditional healers and the community in general, is important to improve care and safeguard the interests of patients.
Keywords: *Epilepsy, Experiences, Traditional healing, Traditional healers*.

306. Mahiti, G. R., Chombo, S., Luoga, P. (2025). Socio-demographic correlates of booking antenatal care in the first trimester among pregnant women in Tanzania. Insights from

the Tanzania Demographic Health Survey 2022. *Reproductive Epidemiology*, Vol. 7. Doi:10.3389/frph. 2025.1669621.

Abstract

Background: In Tanzania, only 34% of pregnant women come for antenatal care (ANC) in first trimester hence miss an opportunity to be checked and get health advice from the health care workers. However, there is scanty of studies which used national representative data to determine the socio-demographic correlates of problem among pregnant women in Tanzania. Therefore, this study aimed to fill the gap. **Methods:** This study analysed secondary data involving a weighted sample size of 4,243 pregnant women aged 15–49 years from the 2022 Tanzania Demographic and Health Survey (TDHS). The analysis adapted a two-level multilevel weighted modified Poisson regression model using Stata 18 software. The dependent variable, "ANC in the first trimester of pregnancy," is defined as the binary outcome variable. The independent variables included maternal factors and household factors. **Results:** The two-level multilevel modified Poisson regression indicated that one year increase in age of a mother at first birth results to 2% increase in prevalence of attending ANC in the first trimester (p-value = 0.019). Those in the richest wealth status had 31% higher prevalence of attending ANC in the first trimester compared to counterparts in the poorest wealth status (p-value = 0.011). Those with first pregnancy had 23% higher prevalence of attending ANC in the first trimester compared to those with 24–48 months preceding birth interval (p-value = 0.005). Those with more than 48 months preceding birth interval had 28% higher prevalence of attending ANC in the first trimester compared to counterparts who had 24–48 months preceding birth interval (p-value <0.001). Those living in a household with more than 6 members had 32% less prevalence of attending ANC in the first trimester compared to those living in household with 1–4 members (p-value <0.001). Study participants who reported large walking distance to health facility in their residing communities indicated 24% less prevalence of attending ANC in the first trimester (p-value = 0.007). **Conclusion:** ANC attendance in the first trimester of pregnancy was significantly associated with wealth index, household size, preceding birth interval, age at first birth and distance to health facility. Programs aiming at increasing early ANC booking should prioritize activities that improve women's livelihoods, particularly those targeting lower socioeconomic and educational groups. ***Keywords:*** *antenatal care, pregnant women, first trimester, Tanzania, TDHS.*

307. Mahiti, G., Mohamed, H., Sambo, M., *et al…* (2025). Barriers to Sustaining Dog Vaccination Campaigns against Rabies: Perspectives from Dog and Cat Owners and Other Stakeholders in Kisarawe District, Tanzania. *Tanzania Medical Journal*, Vol. 36(2). Doi:10.4314/4fz18x24.

Abstract

Background: Rabies is caused by a neurotropic virus of the genus Lyssavirus of the family Rhabdoviridae that affects all mammals. About 99% of the transmission of the virus to humans is due to bites from domestic dogs. Rabies is a neglected tropical disease that causes more than 59,000 human deaths each year in the world, particularly in Asia and Africa. It causes a loss of 3.7 million Disability Adjusted Years per year and about 8.6 billion USD of economic losses. Over

80% of susceptible dog populations remain unvaccinated in Africa, and as a result, rabies remains endemic on the continent. Dog vaccination, provision of post-exposure prophylaxis to people bitten by dogs, and awareness are the major interventions to prevent and control rabies. Kisarawe district in Tanzania is considered to be among the hotspots for rabies as it borders the Nyerere National Park. Despite this fact, rabies vaccination coverage of dogs in Kisarawe remains low. **Objective:** To explore barriers to sustaining dog vaccination campaigns against rabies in Kisarawe district, Tanzania. **Methods:** This was an exploratory qualitative research design, which was conducted in Kisarawe District, Pwani Region in Tanzania. A total of thirty-three in-depth interviews were administered to dog owners, cat owners, livestock officers, and clinicians. Data were summarized and analyzed using a thematic approach, systematic coding, and with the aid of NVivo v14 software for qualitative analysis. **Results:** Six themes emerged that reflect perceptions of respondents: "Awareness on rabies disease"; "Prevention of rabies including post-exposure prophylaxis of a person bitten by rabid dog"; "Reasons for dog owners not to bring dogs for vaccination during the campaigns and Low turn up among dog/cat owners to vaccinate their dogs", "inadequate knowledge among dog and cat owners on rabies protection by the vaccine"; "misconception that vaccine can do harm to dogs and cats; and "challenges facing livestock officers to vaccinate dogs". Specific barriers include a shortage of field staff, equipment, and anti-rabies vaccines. In addition, low turnout among dog/cat owners to vaccinate their dogs during campaigns was a big barrier. **Conclusion:** The study findings have revealed barriers to achieving high coverage of dog vaccination despite the presence of vaccination campaigns in Kisarawe district. Education and awareness among dog and cat owners on vaccination against rabies should be conducted frequently while implementing a scheduled provision of free rabies vaccine. Vaccines, supplies, and related equipment should always be available and distributed for increased vaccination coverage. ***Keywords:*** *Rabies, Barriers, Vaccination, Dog/Cat owners, Kisarawe, Tanzania*.

308. Mahiti, G.R., Adam, J., Luoga, P. (2025). Prevalence and determinants of cervical cancer screening among women aged 15–49 years in Tanzania: analysis of demographic and health survey 2022. *Archives of Public Health,* Vol. 83(135). Doi:10.1186/s13690-025-01629-w.

Abstract

Background: In Tanzania, cervical cancer is the fourth leading cause of cancer-related deaths and the foremost type of cancer affecting women of reproductive age (15–49 years) and beyond. Cervical cancer is preventable and treatable, which underscores the importance of early screening. This study aimed to determine the prevalence and determinants of cervical cancer screening (CCS) among women of reproductive age (15–49) in Tanzania. **Methods**: In this study we analysed secondary data of 15,254 women drawn from the 2022 Tanzanian Demographic and Health Survey (TDHS). Data were weighted using the individual weight for women (v005/1,000,000) according to DHS guidelines. The dependent variable was CCS status, while independent variables included demographic characteristics, socio-economic factors, and health system factors. Descriptive analysis was used to show the distribution of respondents in terms of frequency and percentage. Weighted binary logistic regression model was used to determine associations between the

variables. In addition, multivariable logistic model was used to control confounders and assess possibility of interaction. A significance threshold of *p*-value < 0.05 at 95% confidence interval (CI) was applied to assess the significance of each variable. **Results:** The prevalence of women aged 15–49 years who have ever undergone CCS in Tanzania was 7% (95% CI: 6.58, 7.93). Despite the low proportion of women who have ever received screening, cervical screening was significantly more common among women aged 30–49 years (adjusted Odds Ratio (aOR) = 3.56, 95% CI = 2.75, 4.60), married (aOR = 1.44, 95% CI = 1.11, 1.87), separated individuals (aOR = 1.64, 95% CI = 1.20, 2.24), smokers (aOR = 11.75, 95% CI = 1.93, 71.60), living with HIV (aOR = 5.72, 95% CI = 4.33, 7.56), and those who listened to the radio at least once a week (aOR = 1.46, 95% CI = 1.20, 1.78). Conversely, women who were less likely to be screened for CCS were typically characterized by residing in rural areas (aOR = 0.66, 95% CI = 0.53, 0.82), having informal education (aOR = 0.43, 95% CI = 0.30, 0.60), from low economic backgrounds (aOR = 0.49, 95% CI = 0.37, 0.66), unemployed (aOR = 0.78, 95% CI = 0.65, 0.952), never using contraception (aOR = 0.82, 95% CI = 0.70, 0.97), never covered by health insurance (aOR = 0.58, 95% CI = 0.45, 0.74). These factors were significantly associated with the uptake of CCS services among women aged 15–49 years in Tanzania. **Conclusion:** The study highlights that woman aged 15–49 years who have ever undergone CCS in Tanzania is generally low at 7%, compared to the WHO recommendation of 70%. Women with no formal education or primary education, belonging to the poor wealth quintile, and having no access of listening to the radio at least once per week; had lower possibility of undergoing CCS compared to their counterparts. Tailored programs aimed at increasing cervical cancer screening should target all women in order to attain the WHO recommendation. Additionally, there is a need to enhance education and health insurance coverage among community members to increase women's accessibility to CCS services.

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309. Mahiti, G.R., Shine, J., Munuo, A., *et al*... (2025). Efforts to Address the Burden of Overweight and Obesity Among Children and Adolescents in Tanzania: Stakeholders' Perspectives on the Available Policies and Strategies. *eajahme*, Vol. 8(1). Doi:10.58498/eajahmev8i1.74.

Abstract

Background: Introduction: Malnutrition affects all ages and accounts for 36% of the global disease burden. The World Health Organization (WHO) developed a plan to help governments address malnutrition through better policies and service delivery. In Tanzania, nearly 500,000 children are overweight or obese, especially among urban adolescent girls. However, the effectiveness of current policies on this issue is unclear. This study aims to explore stakeholders' perspectives on policies addressing childhood obesity and identify priorities for national action. **Methods:** This cross-sectional exploratory qualitative study was conducted in Dodoma and Dar es Salaam regions. A purposive sampling technique was employed to select Key Informants. A total of 22 respondents were selected for interviews from within and outside the government sectors. Respondents were selected from among national government officials, representatives of United Nations agencies, academicians from institutions of higher learning, members of civil society organisations, professional associations, and personnel from mass media. A landscape analysis and thematic analysis were employed to analyse the collected data. **Results:** The study highlights

significant gaps in policies, legislation, and strategies addressing overweight and obesity among children and adolescents. Existing policies are outdated and focus more on being underweight than on being overweight, despite the latter being a major contributor to non-communicable diseases (NCDs). Findings revealed a lack of accessible data, particularly for demographics beyond children and reproductive-age women, and a low level of awareness about the health effects of overweight and obesity. Key challenges included insufficient data systems and the prevalence of unhealthy diets. **Conclusion:** The study calls for improved knowledge through interventions targeting all sectors and decision-making levels. It suggests incorporating overweight and obesity control into school curricula, updating policies to include nutrition labelling, and regulating unhealthy food marketing to children. Creating an enabling environment for healthy food choices and physical activity is also essential. A multi-sectoral approach involving stakeholders is crucial for addressing these issues effectively.

310. Mahwera, D., Msaki, R., Kishimba, R., *et. al*… (2025). Utilization of adequately iodized salt and its associated factors in Tanzania rural areas: a case of Kilwa district, Lindi region, 2023. *PLoS One*, Vol. 20(11). Doi: 10.1371/journal.pone.0337337.

Abstract

This study assessed household utilization of adequately iodized salt and its associated factors in Kilwa district, Tanzania, where utilization remains low, especially in areas with local salt production. Using a cross-sectional design, 493 households were systematically sampled and interviewed, with 14 local salt producers purposively recruited for in-depth interviews; onsite iodine rapid tests and laboratory analyses determined salt iodine content. Results showed only 9.4% of households used adequately iodized salt. Factors significantly associated with utilization included family size of five or fewer members (AOR = 3.49; 95% CI: 1.62–7.54), good knowledge about iodized salt (AOR = 4.97; 95% CI: 2.04–12.11), storage of salt in dry areas (AOR = 4.44; 95% CI: 1.51–13.07), exposure of salt to sunlight (AOR = 0.29; 95% CI: 0.10–0.85), and salt staying less than two months (AOR = 2.34; 95% CI: 1.10–5.00). Key reasons for low availability of iodized salt included poor protection at production sites, supply of non-iodized salt, lack of training for local producers, community preference for non-iodized salt, and presence of multiple local salt producers. The findings indicate that the prevalence of iodized salt use is very low in Kilwa, with factors such as family size, knowledge, storage practices, sunlight exposure, and salt duration influencing utilization. The study recommends intensified government awareness campaigns to improve knowledge and practices related to iodized salt use, alongside interventions to enhance salt quality and availability at production sites.

311. Majani, E., Tariq, S., Kisoka, I. A. (2025). Health diplomacy for a resilient Africa: Addressing shared threats and fostering regional collaboration. *An International Journal for Research,* Vol. 20 (1). Doi:10.1080/17441692.2025.2553637.

Abstract

Africa faces complex, interconnected health challenges like endemic diseases and pandemics, which overwhelm its healthcare systems. This article argues that health diplomacy is a vital tool for

tackling these issues through regional collaboration. Health diplomacy, in the African context, means strategic engagement and negotiation among countries, regional bodies, non-state actors, and international partners. The article highlights the urgent need for this approach due to increased cross-border movement, climate change, shared resource constraints, and geopolitical interdependencies. It identifies key areas where health diplomacy is crucial: disease surveillance and control, cross-border healthcare access, harmonizing health policies, and joint procurement of medical supplies. The article also examines the roles of major players like the African Union (AU), Regional Economic Communities (RECs), NGOs, and international organizations. Looking ahead, it outlines strategies to strengthen health diplomacy by leveraging digital health, addressing climate-related health risks, promoting youth and gender inclusion, and securing sustainable financing. The ultimate goal is to build a more resilient and healthier Africa through collective action and sustained regional cooperation. **Keywords:** Health diplomacy, Africa regional collaboration, cross-border health disease surveillance.

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312. Majani, N.G., Chillo, P., Akida, M., (2025). Pulse oximetry screening for critical congenital heart disease in Tanzanian newborns: Diagnostic accuracy, sensitivity, and specificity in a low-resource healthcare setting. *PLOS Global Public Health*, Vol. 5(7). Doi: 10.1371/journal.pgph.0004904.

Abstract

Early detection of Critical Congenital Heart Disease (CCHD) is crucial for reducing infant mortality. Pulse oximetry (POX) is widely utilized for screening CCHD in high-resource settings; however, its diagnostic accuracy in low-resource environments, such as sub-Saharan Africa, remains under-researched. This study aimed to assess the diagnostic accuracy of POX in screening Tanzanian newborns for CCHD. This prospective cohort study was conducted in two hospitals in Dar es Salaam, Tanzania. We used pre- and post-ductal saturation (SpO2) readings prior to discharge. A positive screen was defined as SpO2 < 90%; two pre- and post-ductal SpO2 readings <95%; and/or a pre- or post-ductal difference that exceeded 3%. All newborns with positive screening tests underwent echocardiography, while those with negative tests were followed for six months. The primary outcome was POX diagnostic accuracy. The study adhered to STARD guidelines for reporting diagnostic accuracy studies. Between October 2020 and June 2023, 10,630 newborns were screened. The majority (5,721; 54.0%) were male, resulting in a male-to-female ratio of 1.2. The median birth weight was 3.0 (IQR: 2.6–4.4) kg. A total of 51 (0.5%) newborns tested positive on POX, of which 18 (35.3%) had congenital heart disease (CHD), and 15 (83.3%) were classified as critical, leading to a CCHD prevalence of 1.41 per 1,000 live births (95% CI: 0.70–2.13), which increased to a cumulative prevalence of 3.27 per 1,000 live births (95% CI: 2.29–4.67) at six months. With a follow-up rate of 86.7% (9,170/10,574), POX demonstrated a sensitivity of 50.0% (95% CI: 32.1–67.9), a specificity of 99.5% (95% CI: 99.4–99.7), a false-positive rate of 0.4%, and an overall accuracy of 99.5% (95% CI: 99.2–99.5). Screenings conducted between 48 and 72 hours exhibited the highest diagnostic performance, AUC 0.79 (95% CI: 0.64–0.93), with a significant odds ratio (OR) of 5.31 (95% CI: 2.45–11.49, p = 0.00001). Newborns with a birth weight <2.5 kg were less likely to have CCHD detected by POX, OR 0.403 (95% CI: 0.19–0.87, p = 0.021). POX demonstrated lower sensitivity but higher specificity and

diagnostic accuracy after 48 hours. The timing of screening and birth weight affected its accuracy, indicating a need for protocol adjustment.

313. Majani, N.G., Koster, J.R., Nkya, D, *et al*... (2025). Translation and validation of the Swahili pediatric quality of life family impact module for caregivers of children with congenital heart disease. Scientific *Reports*, Vol. 15(1). Doi:10.1038/s41598-025-04838-z.

Abstract

The Pediatric Quality of Life Inventory™ (PedsQL™) family impact module is a widely used tool for assessing the health-related quality of life (HRQoL) of caregivers of children with chronic illnesses; however, it has not been available in Swahili. This study aimed to translate, culturally adapt, and validate the Swahili version of the PedsQL family impact module (FIM) among caregivers of children with heart disease in Tanzania. As a secondary aim, the study explored differences in caregiver HRQoL between those whose children had undergone surgery and those who had not, using the newly translated tool. A cross-sectional survey was conducted among 204 primary caregivers at a national cardiac referral centre. Standardised translation and adaptation procedures were followed. Psychometric evaluation included internal consistency reliability, construct validity through known-groups comparisons, and effect size estimation. The Swahili version demonstrated excellent internal consistency (Cronbach's $\alpha = 0.99$) and good construct validity. Socioeconomic status was the only consistent predictor of HRQoL in multivariable models. Caregivers in the operated group consistently reported higher HRQoL scores, highlighting the potential benefit of surgical intervention on family well-being. These findings strongly support the Swahili PedsQL FIM as a culturally appropriate and psychometrically sound tool. It offers promise for clinical care and future outcome evaluations in similar settings.

314. Majigo, M., Sukanyi, C., Makaria, E.H., *et al*... (2025). Bacterial pathogen profile and antimicrobial resistance in neonates with bloodstream infections in Dar es Salaam, Tanzania. *Bulletin of the National Research Centre,* Vol. 49(1). Doi:10.1186/s42269-025-01359-7.

Abstract

Background: Neonatal sepsis is a systemic infection that significantly contributes to neonatal mortality. The causative agents vary by geographical location and change over time. Pathogens can be transmitted through vertical or horizontal means. Clinical presentations differ, with some neonates exhibiting multiple symptoms while others display non-specific signs. Over time, there has been increasing resistance to the antibiotics used in the empirical treatment of infectious diseases. The current retrospective cross-sectional study design examined the etiology of neonatal sepsis and antimicrobial susceptibility patterns among neonates admitted to a tertiary hospital from July 2020 to June 2022 by reviewing data for neonates with blood culture results. **Results:** We

included 282 neonates, with 52.8% being males and 72.2% aged between 1 and 3 days. Gram-positive bacteria were predominantly isolated, accounting for 66.3%, with coagulase-negative staphylococci identified as the most common pathogen, comprising 54.3% of all pathogens. Klebsiella species were the second most frequently isolated pathogens (19.5%), notably more prevalent in neonates aged 1–3 days than those aged 4–28 days (22.5% vs. 11.5%, $p = 0.037$). Overall, increased antimicrobial resistance was observed for penicillin (94.4%), ampicillin (91.2%), erythromycin (89.5%), aztreonam (82.4%), ceftriaxone (80.0%), gentamicin (77.9%), and trimethoprim-sulfamethoxazole (75.5%). Lower resistance rates were noted for amikacin (6.5%), imipenem (16.0%), and meropenem (18.9%). The resistance to methicillin among Staphylococcus aureus and coagulase-negative staphylococci was 68.4% and 82.3%, respectively. The overall proportion of multidrug-resistant strains was 66.5%, ranging from 57.9% (Gram-negative bacteria) to 71.2% (Gram-positive bacteria). The pathogen with the lowest rate of multidrug resistance was Pseudomonas species (18.2%). **Conclusion:** Various pathogens, primarily Gram-positive bacteria, were identified as associated with neonatal sepsis. Most pathogens exhibited resistance to commonly used antibiotics, with two-thirds showing multidrug resistance. These findings highlight the need for evidence-based antibiotic prescriptions and reinforce ongoing antimicrobial resistance surveillance and antibiotic stewardship programs.

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315. Makani, J., Bukini, D., Malangahe, S., *et al*… (2025). Access to gene therapy for sickle cell disease in Africa. *Ebiomedicine,* Vol. 115.

Abstract

Background: In 2017, Gene Therapy (GT) was used to cure Sickle Cell Disease (SCD).1 This was a major achievement in a genetic condition that had first been described over 100 years ago, and the therapeutic interventions were limited to disease-modifying medicines (Hydroxyurea), exchange blood transfusion (Ext), and Hematopoietic Stem Cell Transplant (HSCT). With this milestone, individuals with SCD requested access to curative therapy, particularly in countries in Africa where the disease is most prevalent and causes high morbidity and mortality.2 Unfortunately, this milestone was accompanied by a 'health crisis' as countries in Africa observed an increase in the number of patients seeking HSCT outside the continent and a 'financial crisis', as both curative interventions (HSCT and GT) were associated with a high cost (USD 100,000 to 2 million USD). Stakeholders working in SCD and related disciplines responded to this situation in an integrated manner that included coordination, healthcare, advocacy, research, and training (CHARTA).3 To increase access to therapy, the strategy had to be bold, innovative, and contemporaneous, optimising existing interventions whilst preparing for new therapies with in vivo GT as the holy grail.4 Furthermore, it quickly became apparent that partnerships had to be at the core of the response. The response to the health crisis included the strengthening and establishment of treatment centres and centres of excellence (TC/CoE) where advanced therapy could be provided, with multi-disciplinary team (MDT) meetings with discussions between healthcare providers from all over the world. The MDT meetings help to improve patient outcomes by offering comprehensive, specialised, integrated and coordinated care between the referring, transplant and treating centres. The response to the financial crisis required advocacy with patients and engagement with policymakers. Advocacy with patients was needed to understand the needs

(treatment or cure) and to see how best to support those who opted for curative therapies.5 Engagement with policy and policy makers had to occur at three levels: country, regional (Africa) and global.6 This included outlining and communicating the need to develop capacity for advanced therapy in-country to reduce patients seeking healthcare outside the country, and in Africa. Countries in Africa have strengthened specialists' services through different financial models, e.g., investing public funds or partnering with the private sector or philanthropy. We conclude by recommending that research must be at the heart of the responses, ranging from clinical, social, implementation, and basic sciences, with an integrated approach, such as CHARTA, that intentionally coordinates partnerships in financing and policy, whilst centering the patient and public community.

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316. Makani, J., Mahlangu, J., Thomas, U., *et al*... (2025). Gene Therapy in Africa: An Interview with Julie Makani and Johnny Mahlangu. *GEN Biotechnology*, Vol. 4(4). Doi:10.1177/27681572251361871.

Abstract

Although there has been exciting progress in gene and cell therapy in recent years, there are major hurdles to translating this early success to help patients in Africa. Experts on the continent point to many issues, including the lack of homegrown clinical trials funding opportunities and the need to develop in vivo approaches that might make therapies more accessible to millions of patients with disorders such as sickle cell disease (SCD), many of whom are poor and live in rural areas. But despite these concerns, there is a groundswell of research and public health activity focused on gene therapies occurring in clinics and academic institutions on the continent. One area that is garnering significant attention is the effort to treat patients living with blood-based disorders such as SCD, which disproportionately affects people of African descent, and hemophilia.

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317. Makaranga, J., Moshi, G., Sukums, F. (2025). Exploring the nature, drivers, and consequences of electronic medical record workarounds in Tanzanian public primary health care. *Records Management Journal*, Vol. 35(3). Doi: 10.1108/RMJ-05-2025-0049

Abstract

Purpose: This study aims to explore the nature, drivers, and consequences of electronic medical record (EMR) workarounds in Tanzanian public primary health-care facilities. **Design/methodology/approach:** Drawing on workaround theory, the authors conducted 41 interviews with health-care providers in selected public primary health-care facilities. Convenience sampling guided site selection, while purposive sampling identified participants. Thematic analysis was applied to uncover patterns in the data. **Findings:** This analysis discovered six recurrent EMR workaround cases, driven by a combination of technical, organizational, and human factors spanning restrictive EMR design and unreliable infrastructure, insufficient technical support, and heavy patient loads, as well as varied user digital literacy. This combination of factors compels users to adopt workarounds, which in turn lead to significant consequences: compromised data integrity, disrupted clinical continuity, operational inefficiencies from redundant manual processes, increased financial and regulatory risks, and, ultimately, diminished

user trust in the EMR system, which reduces morale and digital engagement. **Originality/value:** While workaround behaviours have increasingly been studied, limited research has focused on Tanzania, particularly in primary health care. To the best of the authors' knowledge, this is the first study to examine EMR workarounds in this setting. The study findings address a critical knowledge gap and provide insights for strengthening EMR design, user training, and workflow alignment to improve digital health implementation in Tanzania's public primary health care.

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318. Makori, N., Masumo, R., Rashid, S., *et al*… (2025). Enhancing Hemoglobin Levels in Moderately Acute Malnourished Children Aged 6–59 Months: A Randomized Controlled Trial of a Novel Ready-to-use Food (RUF). *Anemia*, Vol. 25(1). Doi:10.1155/anem/8863009.

Abstract

Iron deficiency anemia among children with moderate acute malnutrition (MAM) presents a significant challenge that can negatively impact treatment outcomes. This burden and its contributing factors among children with MAM in Tanzania prompted the current study, which aimed to assess the efficacy of ready-to-use food (RUF) supplements in increasing hemoglobin levels specifically among children with MAM aged 6–59 months. A total of 271 children (RUF: 91; CSB+: 90; standard of care: 90) recruited for the study, and the randomized controlled trial employed a three-parallel-arm design; the first arm received corn soy blend plus (CSB+) with infant and young child feeding (IYCF) counseling, the second arm received RUF and IYCF counseling, and the third arm served as a control group. The intervention was administered over 3 months, following the WHO guidelines for intervention studies. Results indicated a mean increase of 2.70 g/dL in mean hemoglobin (Hb) concentration (at $p \leq 0.01$) among the RUF intervention arm. Similarly, the CSB arm showed an increase in mean Hb concentration from 9.88 g/dL to 11.88 g/dL ($p \leq 0.01$). In contrast, the standard of care arm experienced a decrease in mean Hb levels by 0.25 g/dL ($p > 0.05$) at the end line. Additionally, the prevalence of anemia was significantly reduced from 65.90% to 27.20% at baseline and at the end of the study, respectively, with a notably lower prevalence of 14.3% in the RUF arm as compared to the standard of care arm of 44%. The study provides strong evidence that RUF is efficacious in improving Hb concentration, a key biomarker for nutritional anemia among children with MAM, and successfully reduces the prevalence of anemia.

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319. Makuwani, A.M., Habib, I.R., Cresswell, J., *et al*… (2025). Quantifying the use of routine health service data to inform policy and interventions in maternal and child healthcare. Experience from Tanzania. *J Surg Care*, Vol. 5(1). Doi:10.22541/au.175612701.12123896/

Abstract

Introduction: Global experts and agencies often downplay the value of routine Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH) data. Therefore, we demonstrate the significance of a Health Information Management System (HMIS) for tracking progress and

assessing the utility of RMNCAH data in improving healthcare systems, particularly in low-resource settings. **Methods:** We utilized HMIS and related datasets to evaluate the availability and usefulness of RMNCAH routine data in Tanzania between 2014 and 2024. **Results**: Increases in service delivery points correlated with the following improvements in key maternal health indicators: antenatal visits before 12 weeks (15.1% to 42.9%; 2014–2023), institutional births (64.4% to 85.8%; 2014–2023), cesarean sections (5.6% to 11.6%; 2014–2022), and postnatal visits (45.3% to 91.6%; 2014–2023). The RMNCAH scorecard transitioned from predominantly red in 2014 to green in 2024, reflecting improved maternal and perinatal mortality surveillance. Obstetric haemorrhage and pre-eclampsia accounted for two-thirds of maternal deaths; competency and accountability were critical determinants. Neonatal deaths and stillbirths during 2018–2023 numbered 50,123 and 82,995, respectively, with 80% of neonatal deaths attributed to prematurity, birth asphyxia, and sepsis. Limited neonatal services contributed to mortality, with only 14 hospitals containing neonatal care units in 2018, compared with 156 district and 28 regional hospitals in 2024. **Conclusion:** When systematically tracked and analyzed, routine RMNCAH data provide crucial evidence to inform policymaking and track RMNCAH intervention outcomes. Our findings underscore the importance of stakeholders investing in routine data collection to facilitate data-driven decision-making and real-time progress tracking. KEY MESSAGES What is already known on this topic? Global experts and agencies downplay the value of RMNCAH routine data, particularly in low-resource settings. What this study adds. This study demonstrates how routine RMNCAH data can inform RMNCAH interventions and track progress. How this study might affect research, practice, or policy. Our findings highlight the value of stakeholders investing in routine data collection to enhance data-driven decision-making and facilitate real-time progress tracking.

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320. Malik, A.N.J., Mnedeme, G.F., Iriya, N., *et al*... (2025). Evaluation of primary healthcare worker training to screen children under 5 years of age with a low-cost alternative to the direct ophthalmoscope, the 'Arclight', as part of the Integrated Management of Newborn and Childhood Illness (IMNCI) programme in Tanzania. *BMJ Paediatrics Open*, Vol. *9*(1). Doi:10.1136/bmjpo-2025-003520.

Abstract

Objective: To evaluate the integration of childhood eye screening with the Arclight direct ophthalmoscope into an already existing WHO/UNICEF Integrated Management of Newborn and Childhood Illness (IMNCI) programme in Tanzania**. Design:** Prospective interventional study. Setting: Primary healthcare facilities in a semirural district, central Tanzania**. Participants:** Two IMNCI (Integrated Management of Newborn and Childhood Illness) facilitators received training enhanced with four newly developed videos on using the Arclight. These facilitators then trained 378 primary healthcare workers (PHCWs) who were already familiar with the IMNCI 'Eye Module'. The training covered how to perform red reflex testing with the Arclight device, interpret the results, and appropriately refer children who failed the screening. Intervention: 'Arclight' direct ophthalmoscope and training of primary healthcare workers. Main outcome measures: Number of children screened and diagnosed with eye conditions. **Results:** Over 4 months, 2 trained IMNCI facilitators trained 378 PHCWs on how to use the Arclight direct ophthalmoscope

to screen children's eyes. Over 6 months, 36 000 children were screened in primary care settings, with 136 seen at district-level facilities and 105 referred to regional and tertiary facilities. The most common diagnoses of children referred were allergic conjunctivitis (37.4%), bacterial conjunctivitis (31.2%), and cataract (7.1%). There were six cases of ophthalmia neonatorum (3.9%) and two cases of retinoblastoma (1.3%). The incidence rate per 10 000 children of cataract was 3.05, ophthalmia neonatorum 1.67, and retinoblastoma 0.55. **Conclusion:** Primary healthcare workers in Tanzania can be trained to screen for eye disease in babies and children using the Arclight direct ophthalmoscope as part of an ongoing child health programme, leading to the detection of treatable and serious eye diseases. Training all PHCWs would allow every child under 5 years old to be screened for eye disease, detecting serious eye conditions such as cataract and retinoblastoma earlier, preventing avoidable childhood blindness and mortality**.** ***Keywords****: Child Health, Ophthalmology, Developing Countries.*

321. Malik, A.N.J., Spicer, N., Mafwiri, M., *et al*… (2025). Integrating eye health into a child health policy in Tanzania: global and national influences. *Health Policy and Planning,* Vol. 40(7). Doi:10.1093/heapol/czaf029.

Abstract

Global consensus has shifted to focus on how children can be supported to not only 'survive' but to 'thrive'. Blindness and visual loss in early childhood undermine a child's ability to thrive, affecting psychomotor, cognitive, and social development leading to life-long consequences for educational attainment, employment, economic and social status, and wellbeing. Despite this, eye health for children under the age of 5 years has been neglected, and not politically prioritized. In Tanzania, policy makers decided in 2019 to include eye conditions in the national Integrated Management of Newborn and Childhood Illness (IMNCI) programme, despite eye health not being part of the global World Health Organization/UNICEF IMNCI strategy. We conducted a qualitative policy analysis to explore enabling factors and barriers to this policy change. The interviews were semi-structured with key actors selected purposively and by snowball sampling, including those with a role in child and eye health at national and global levels. We used an adapted Shiffman and Smith framework (Generation of political priority for global health initiatives: a framework and case study of maternal mortality. Lancet 2007; 370:1370–9) to guide the interviews and analysis, and the Consolidated Criteria for Reporting Qualitative Research for planning and reporting. This study shows how rapidly one country altered its overall child health policy to include eye health, driven by good quality collaborative research and collective action (cohesive policy community) which importantly included co-design with the decision makers (Ministry of Health actors). These developments coincided with the shift in the international agenda moving from 'survive to thrive' in child health which was leveraged to include eye care in the national strategy. ***Keywords:*** *child health, health policy, eye health.*

322. Mallum, A., Li, H., Ngwa, W., *et al*… (2025). Hypofractionated Radiotherapy as a Potential Alternative to Conventional Treatment for Cervical Cancer in Resource-Limited Settings: A Prospective Comparative Analysis. *International Journal of Radiation Oncology, Biology, Physics*, Vol. 123(1).

Abstract

Purpose/Objective(s): The study aimed to evaluate and compare the toxicity profiles of Hypofractionated Radiotherapy (HFRT) and Conventional Radiotherapy (CFRT) as the primary endpoint while the secondary endpoint was the survival outcomes. **Materials/Methods:** The prospective cohort study was conducted at Inkosi Albert Luthuli Central Hospital (IALCH), South Africa, from March 2022 to March 2023. A total of 107 patients diagnosed with FIGO staged IB3-IVA cervical cancer were enrolled. Patients were randomly assigned to receive CFRT (n=54) or HFRT (n=53). Clinical data and adverse events were recorded. Statistical analysis was performed using R statistical Computing Software (version 3.6.3), with a significance level set as p=0.005. **Results:** The median age at diagnosis was 36.4 years (range: 28.2-62.9), with 85.0% of the patients under 40years old and 86.0% being HIV positive. Most patients in both groups presented with stage IIB and moderately differentiated squamous cell carcinoma. HFRT significantly reduced treatment duration, with patients completing therapy in a median of 35 days compared to 62 days for CFRT (p=0.001). Both groups experienced similar rates of gastrointestinal (GI), genitourinary (GU), and skin toxicity, though GI (p=0.005) and GU (p=0.01) adverse effects were significantly different between groups. Vaginal stenosis was more common in the CFRT group (51.9%) than in the HFRT (43.4%). Despite these differences, both groups exhibited comparable clinical response, recurrence-free survival rates, and an absence of residual disease within 12 months of treatment. **Conclusion:** HFRT (42.72Gy in 16 fractions) demonstrated clinical outcomes comparable to CFRT (50.50Gy in 25 fractions) while significantly reducing treatment duration. These findings suggest that HFRT is a viable alternative in resource-limited settings, potentially improving treatment accessibility and efficiency for cervical cancer patients.

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323. Mallum, A., Tendwa, M.B., Saidu, R., *et al*… (2025). A comparative analysis of hypo-fractionated versus conventional radiotherapy for cervical cancer in a resource-limited setting: a prospective study. *Gynecological Oncology*, Vol. 15. Doi:10.3389/fonc.2025.1552346.

Abstract

Introduction: Hypofractionation has potential benefits for cancer patients in low-income countries by reducing treatment duration and resource demands. However, few studies have examined the potential for higher toxicity due to the increased radiation dose per session, particularly in patients with existing health burdens like HIV. This study aimed to evaluate and compare the toxicity profiles of conventionally fractionated radiotherapy (CFRT) and hypofractionated radiotherapy (HFRT) in cervical cancer patients in a low-income setting, facilitating a better understanding of the associated risks and benefits to ensure safe and effective treatment options. **Methods:** A prospective cohort study was conducted at Inkosi Albert Luthuli Central Hospital (IALCH) in South Africa from March 2022 to March 2023. A total of 107 patients with confirmed cervical cancer were recruited and randomly assigned to either CFRT (n = 54; 50.50 Gy in 25 fractions) with weekly chemotherapy or HFRT (n = 53; 42.72 Gy in 16 fractions). Additionally, both groups received high-dose-rate (HDR) intracavitary brachytherapy, with doses of 18.00-, 21.00-, or 10.00-Gy boost. Clinical data and adverse events were recorded and analyzed, with statistical significance set at $p < 0.05$. **Results:** The median age at diagnosis was 36.4 (28.2–

62.9) years, with 85.0% of patients under 40 years and 86.0% HIV-positive. Most patients in both groups presented with stage IIB and grade II disease. HFRT patients completed radiotherapy significantly faster (median, 35 days) than CFRT patients (median, 62 days) ($p < 0.001$). Both groups experienced similar rates of gastrointestinal (GI), genitourinary (GU), and skin toxicity, although significant differences were found in GI ($p = 0.005$) and GU ($p = 0.01$) side effects. Vaginal stenosis was more common in the CFRT group (51.9%) than in the HFRT group (43.4%). Both groups showed comparable clinical responses, recurrence-free survival, and absence of residual disease within 12 months. **Conclusion:** HFRT (42.72 Gy in 16 fractions) offers comparable outcomes to CFRT (50.50 Gy in 25 fractions) with a shorter treatment duration, making it a feasible option in resource-limited settings.

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324. Mallya, S.P., Mbelele, P.M., Kisonga, R.M., *et al*… (2025). Diagnostic Accuracy of the TrueNat™ MTB Plus Assay for Detecting Pulmonary Tuberculosis in Adults. *PLoS One*, Vol. 20(12). Doi: 10.1371/journal.pone.0327936.

Abstract

Tuberculosis (TB), caused by Mycobacterium tuberculosis remains a global threat, affecting 10.8 million people and causes 1.3 million deaths annually. Over 2.5 million cases go undiagnosed partly due to current diagnostic limitations. In particular, smear microscopy is less sensitive, culture is slow and prone to contamination, and the rapid Xpert® MTB/RIF Ultra (Ultra) needs advanced infrastructure. This study assessed the diagnostic accuracy of TrueNat™ MTB Plus assay (TrueNat), a portable, WHO-endorsed point-of-care tool, compared to Ultra, smear microscopy, and Löwenstein–Jensen (LJ) culture. This cross-sectional study enrolled 260 consenting adult participants (≥18 years) with presumptive TB in northern Tanzania. Participants' sputum samples were tested for M. tuberculosis using smear microscopy, LJ culture, Ultra and TrueNat. TrueNat performance was assessed using sensitivity, specificity, predictive values and area under the curve (AUC) against the standard-of-care and a composite reference standard. Age and body-mass-index were summarised using median and interquatile range (IQR). Categorical variables were reported as proportions. Multivariate logistic regression identified TB predictors ($p < 0.05$). Data analysis and visualization were conducted using R. Among 260 participants, 165 (63.5%) were male, with a median age of 46.0 years (IQR: 35.5–57.3); 15 (5.8%) were HIV-positive, and 52 (20%) had undernutrition. TB was detected in 109 (41.9%) participants by at least one test. TrueNat showed sensitivity/specificity of 34.4%/94.7% vs. smear microscopy, 98.9%/95.3% vs. culture, and 86.2%/95.2% vs. Ultra. The AUC values were 0.75, 0.92, 0.96, and 0.91 compared to smear microscopy, LJ culture, Ultra, and a composite reference method, respectively. Participants reporting weight loss were 2.84 times more likely (95% CI: 1.68–4.84, $p < 0.001$) to test positive for TB by TrueNat. The TrueNat compared favorably to both Ultra and culture in terms of diagnostic accuracy, offering the added benefits of faster results and greater suitability for resource-limited settings. These findings suggest that TrueNat is a promising test for rapid TB detection in low-resource settings, warranting further studies to evaluate its implementation and impact on patient management.

325. Malyas, H., Chirande, L., Salingwa, L., *et al*… (2025). Intraventricular haemorrhage, associated factors and mortality among very low birth weight neonates admitted at Muhimbili National Hospital, Dar es Salaam, Tanzania: a prospective cohort study. *Italian Journal of Pediatrics,* Vol. 51(213). Doi:10.1186/s13052-025-01927-7.

Abstract

Background: Intraventricular hemorrhage (IVH) is a serious complication of prematurity with a potential impact on morbidity and mortality, particularly in very low birth weight neonates. Despite advances in neonatal care over recent years, there is no recent data regarding IVH in our setting. This study aimed to determine the proportion of IVH, its associated factors, and mortality at Muhimbili National Hospital (MNH). **Methods:** A hospital-based prospective cohort study was conducted among preterm very low birth weight neonates admitted at MNH. Data was obtained from interviews, physical examination, review of maternal antenatal cards, and neonatal records. Cranial ultrasound was done on day 3 and day 7 of life to determine the presence and severity of IVH. Mortality of neonates was determined on day 7. Data were summarised using frequencies, percentages, median, and interquartile range. Chi-square and Fisher's exact were used to measure the association between categorical variables. Variables found to be significantly associated with IVH were analysed by Poisson regression. A p-value of 0.05 or less was considered statistically significant. **Results:** The proportion of VLBW neonates with IVH was 22.9% with grade 1 being the most prevalent. The majority of IVH (74.7%) occurred within the first 3 days of life. Factors found to increase the risk of IVH in the univariate analysis were gestational age, mode of delivery, respiratory distress syndrome, hypothermia, early-onset sepsis, use of inotropes, thrombocytopenia, and mechanical ventilation. However, none of these factors were independent predictors of IVH in multivariate Poisson regression analysis. Mortality of VLBW neonates with IVH was significantly higher than their counterparts without IVH (RR = 2,95% CI (1.25–3.34). **Conclusions:** IVH is common among VLBW neonates, most of which occurred by day 3 of life. The risk of Mortality was two times higher among VLBW neonates with IVH compared to those without IVH. Further research should be conducted to explore predictors of mortality and long-term outcomes of VLBW neonates with IVH.

326. Mammoliti, K. M., Althabe, F., Easter, C., *et al*... (2025). When Is Postpartum Haemorrhage Treatment Initiated? A Nested Observational Study Within the E-MOTIVE Trial. *BJOG: An International Journal of Obstetrics & Gynaecology*, Vol. 132(11). Doi:10.1111/1471-0528.18293.

Abstract

Objective: To compare the frequency and timing of postpartum haemorrhage (PPH) treatment initiation between hospitals implementing the MOTIVE treatment bundle (which consisted of uterine Massage, Oxytocic drugs, Tranexamic acid, IntraVenous fluids and Examination) and those following usual care. Design: Nested prospective observational study. Setting: Hospitals in Nigeria, Kenya, Tanzania and South Africa participating in the E-MOTIVE trial. Population or Sample: Healthcare workers treating PPH. **Methods:** Between June and December 2022, we observed healthcare workers for 1–2 weeks in 39 E-MOTIVE and 39 usual care hospitals across

Nigeria, Kenya, Tanzania, and South Africa managing vaginal birth and treating PPH. We descriptively compared the frequency and timing from PPH detection to treatment initiation of individual treatments and the MOTIVE bundle, between E-MOTIVE care and usual care. **Results:** Among 2578 observations in E-MOTIVE care hospitals, 295 (11%) PPHs were treated, and among 2834 observations in usual care hospitals, 219 (8%) PPHs were treated. In E-MOTIVE care hospitals, 97% (286/295) of women with PPH received the MOTIVE bundle, compared to 36% (79/219) in usual care. Median initiation times for the first component were similar (0 vs. 1 min), but E-MOTIVE care hospitals achieved faster initiation of all components (13 min, IQR 6–18) compared to usual care (18 min, IQR 10–25). In total, 79% (233/295) of women in E-MOTIVE care had all components initiated within 20 min, compared to 22% (48/219) in usual care. **Conclusions:** Timely and comprehensive management of PPH using the MOTIVE bundle, particularly initiating all components within 15–20 min, was commonly observed in the E-MOTIVE care hospitals. Scaling up E-MOTIVE care should emphasise timely bundle initiation to strengthen PPH treatment and improve maternal health outcomes in low-and-middle-income countries.

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327. Mammoliti, K. M., Martin, J., Devall, A., *et al*… (2025). When are postpartum haemorrhages diagnosed? A nested observational study within the E-MOTIVE cluster-randomised trial. *The Lancet Global Health*, Vol. 13(11).

Abstract

Background: The definition of primary postpartum haemorrhage as blood loss of 500 mL or more within 24 h after vaginal birth underemphasizes the early postpartum hours due to limited data on the timing of postpartum haemorrhage diagnosis. Understanding postpartum haemorrhage diagnosis timing and diagnostic methods is important for guiding diagnostic and therapeutic strategies. The E-MOTIVE trial evaluated early postpartum haemorrhage diagnosis and a bundled treatment approach, which resulted in a 60% relative reduction in adverse outcomes from bleeding compared with usual care. We aimed to compare timing from vaginal birth to postpartum haemorrhage diagnosis and the diagnostic methods used among four African countries implementing the intervention from the E-MOTIVE trial. **Methods:** Nested within the E-MOTIVE trial (NCT04341662), we conducted direct observations of health-care workers providing clinical care to postpartum women at 39 hospitals implementing the E-MOTIVE intervention across Nigeria, Kenya, Tanzania, and South Africa. One to two weeks of continuous observations were conducted from vaginal birth up to 2 h, between June 27, and Dec 18, 2022. Health-care workers were trained to use clinical judgement (ie, heavy vaginal blood loss, large blood clots expelled, or constant trickle) and various objective blood loss thresholds to diagnose postpartum haemorrhage. The objective blood loss thresholds used in Nigeria, Kenya, and Tanzania were 300 mL or more with at least one abnormal clinical sign (ie, pulse, blood pressure, uterine tone, and vaginal blood flow) or 500 mL or more. The objective blood loss threshold in South Africa was 500 mL or more. We descriptively analysed and compared timing from vaginal birth to postpartum haemorrhage diagnosis and diagnostic methods used between countries. **Findings:** Of 2578 women, 295 postpartum haemorrhages were diagnosed. The median time from vaginal birth to postpartum haemorrhage diagnosis was 15 min in Nigeria and Tanzania, 17 min in Kenya, and 30 min in South

Africa. Diagnosis within 30 min ranged from 58% in South Africa to 86% in Tanzania. By 60 min, 96% to 100% of postpartum haemorrhages were diagnosed across all countries. All postpartum haemorrhages that required an intervention were diagnosed within 90 min. Nigeria, Kenya, and Tanzania commonly used blood loss of 300 mL or more combined with at least one abnormal clinical sign (47%, 65%, and 68%, respectively), while South Africa relied on a definition of 500 mL or more (81%) as the dominant diagnostic strategy. **Interpretation:** In countries where an objective blood loss threshold of 300 mL or more with at least one abnormal clinical sign was used, women received earlier interventions for postpartum bleeding, with a median time to diagnosis of 15–17 min. This was notably faster than in the country that predominantly used a 500 mL or more threshold, where the median time to diagnosis was 30 min. Regardless of whether the threshold was 300 mL or more with abnormal clinical signs or 500 mL or more alone, all postpartum haemorrhages were diagnosed within 90 min of vaginal birth. **Funding:** Bill & Melinda Gates Foundation and Ammalife.

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328. Mammoliti, K.M., Althabe, F., Easter, C., *et. al*… (2025). Clinical care processes for early postpartum haemorrhage diagnosis: a nested observational study within the E-MOTIVE trial. *Frontiers in Global Women's Health*, Vol. 6. Doi:10.3389/fgwh.2025.1527261.

Abstract

Background: Postpartum haemorrhage (PPH) is the leading cause of maternal mortality, particularly in low- and- middle-income countries. The E-MOTIVE trial demonstrated a 60% reduction in severe PPH and related complications with the E-MOTIVE intervention compared to usual care. This nested observational study explored clinical care practices between the time of vaginal birth and the removal of the obstetric drape. Specifically, we assessed the frequency of postpartum maternal assessments, including blood pressure, pulse, uterine tone, vaginal blood flow, and cumulative blood loss assessment—unique to the intervention. We also evaluated diagnostic methods, and blood loss thresholds used for PPH, and how these practices may have contributed to differences in PPH diagnosis and outcomes between E-MOTIVE intervention hospitals and usual care hospitals. **Methods:** This prospective observational study, nested within the E-MOTIVE trial, involved passive, direct observations of healthcare workers providing postpartum care to women and managing PPH across 78 hospitals in Nigeria, Kenya, Tanzania, and South Africa. We conducted a descriptive analysis of the frequency and timing of postpartum maternal assessments, diagnostic methods and blood loss thresholds used to diagnose PPH, comparing clinical practices between E-MOTIVE care and usual care. **Results:** Between June and December 2022, the study included 2,578 women at E-MOTIVE care hospitals and 2,834 at usual care hospitals. At E-MOTIVE hospitals, 88% (2,272/2,578) of women received at least one postpartum maternal assessment, 71% (1,825/2,578) at least two, 57% (1,479/2,578) at least three, and 48% (1,234/2,578) four, with assessments conducted earlier and more frequently than at usual care hospitals. Objective blood loss quantification improved diagnosis, with the most common method and blood loss threshold at E-MOTIVE hospitals being ≥300 mL plus at least one abnormal clinical sign, used in 47% (140/295) of PPHs. Postpartum haemorrhage was diagnosed earlier and more frequently at E-MOTIVE hospitals: 76% (223/295) within 30 min, 97%

(287/295) within 60 min, and 100% 295/295) within 90 min (median: 17 min; IQR 11–30), compared to 54% (119/219), 79% (173/219), 96% (210/219) respectively, and 100% within 134 min in usual care (median: 26 min; IQR 13–56).**Discussion:** Frequent and timely postpartum maternal assessments, along with objective blood loss thresholds of with at least one abnormal clinical sign and ≥500 mL may enhance early PPH diagnosis. The first 90 min postpartum has been identified as a critical window for early diagnosis, termed the "Golden 90 min for PPH diagnosis." Incorporating these insights into clinical training and guidelines may support improved maternal outcomes related to PPH.

329. Manji, K. P., Somji, S., Bakari, M, *et al*... (2025). Efficacy of zinc supplementation for young infants with clinical severe infection in Tanzania: study protocol for a randomised controlled trial. *BMJ Paediatrics Open*, Vol. *9*(1). Doi.org/10.1136/bmjpo-2025-003804.

Abstract

Introduction: Innovative interventions will be essential for countries in sub-Saharan Africa to achieve the 2030 Sustainable Development Goal for child mortality. Infections among young infants, including sepsis, meningitis, and pneumonia, continue to cause a large burden of morbidity and mortality in low- and middle-income countries. Zinc is an essential micronutrient with a well-established role in human health and immune system function, and supplementation may improve survival and treatment outcomes for infants with bacterial infections. **Methods and analysis:** We will conduct an individually randomised, quadruple-blind trial of zinc supplementation among 3250 infants 0–59 days old with clinical severe infection (CSI) in Dar es Salaam, Tanzania. Infants with CSI will be randomised to receive either (1) zinc citrate supplementation consisting of 5 mg elemental zinc taken two times per day for 14 days or (2) a matching placebo supplementation taken two times per day for 14 days. Infants will be followed for 90 days post-randomisation. The coprimary outcomes are (1) infant death (all-cause mortality to 90 days) and (2) treatment failure (composite outcome of death during initial hospitalisation, need for additional respiratory support, use of vasoactive medicines, or change of antibiotics). Secondary outcomes include important infant health and nutritional outcomes. **Ethics and dissemination:** The trial protocol was approved by Harvard T. H. Chan School of Public Health Institutional Review Board, the Muhimbili University of Health and Allied Sciences Institutional Review Board, the National Health Research Ethics Sub-Committee, and the Tanzania Medicine and Medical Device Authority. Findings will be disseminated locally, regionally, and internationally at scientific conference presentations and as peer-reviewed publications.

330. Manji, K., Ame, A. M., Das, S., *et al*... (2025). Assessing COVID-19 seroprevalence and vaccine uptake among women of reproductive age in Zanzibar's archipelago. *PLOS Global Public Health*, Vol. *5*(7). Doi: 10.1371/journal.pgph.0003831.

Abstract

Recent events in public health globally have created a need for response by public health researchers in all disciplines to evaluate the impact on health, morbidity, and mortality of the COVID-19 pandemic that has engulfed the world after 100 years of the previous influenza

pandemic. Most of the immediate responses, globally, have focused on diagnosis and management of severe cases. However, for the evolution of policies dealing with population health in the post COVID-19 era, community-based data for rates of morbidity, risk factors of illness and severity, and outcomes of influenza-like illness in Maternal, Neonatal and Child Health (MNCH) is needed to inform evidence-based policy. This pilot project aimed to collect preliminary data on seroprevalence from the two island populations of Tanzania. The proposed pilot, cross-sectional, facility-based study obtained a random sample of 1082 women of reproductive age visiting PHCUs from Unguja and Pemba. A total of 25 PHCUs were randomly selected among the 98 PHCUs. Venus's blood sample was collected, and information related to the recent history of COVID-19 symptoms was collected in a questionnaire from these women. The blood samples were processed for obtaining serum, which were tested for IgG and IgM antibodies at the PHl-CPHK laboratory in Pemba Island. The overall IgG seroprevalence was 90.76% (95% CI: 89.01–92.51); Pemba: 92.91% (95% CI: 90.61–95.22), Unguja: 88.29% (95% CI: 85.38–91.20).There is minor non-significant difference in exposure between Unguja and Pemba in spite of large difference in tourist inflow between the islands. Severity profile and mortality experience is substantially lower in Zanzibar. The prevalence of Vaccination in community is Low and disinformation seems to be the main cause rather than reluctance. There is no significant relation with respect to symptomatology amongst seropositive along with their vaccination status.

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331. Mansour, A.R., Thobias, J.M., Yondu, E, *et al*... (2025). Determinants of benzodiazepine-dispensing practice among community pharmacy dispensers in Dar es Salaam, Tanzania. *Advances in Pharmacological and Pharmaceutical Sciences*, Vol. *2025*(1). Doi:10.1155/adpp/1404995.

Abstract

Purpose: This cross-sectional study assessed determinants of benzodiazepine (BZP)-dispensing practices among community pharmacy dispensers in Dar es Salaam, Tanzania. **Methods:** A cross-sectional study involving 378 community pharmacy dispensers was conducted between March and June 2024. An adapted structured questionnaire was used to gather information on the sociodemographic, most dispensed BZPs, dispensers' knowledge, and dispensing practice of BZPs. Determinants of dispensing practice were determined by multivariable logistic regression analysis using SPSS Version 23. **Results:** Of 378 dispensers, 232 (61.4%) were female, 263 (69.6%) had a college education level, and 193 (51.1%) were pharmaceutical technicians. Diazepam was the most dispensed BZP (163 (43%)), followed by lorazepam (102 (27%)). More than half, 203 (53.7%), of the dispensers had inadequate knowledge, and 240 (63.5%) of the dispensers had good dispensing practices. Nonpharmaceutical dispensers were less likely to have good dispensing practice (AOR = 0.16, 95% CI (0.05–0.49)), whereas having adequate knowledge of BZPs (AOR = 2.64, 95% CI (1.64–4.25)) was significantly associated with good dispensing practice of BZPs. **Conclusion:** Knowledge levels and the type of pharmaceutical professionals are determinants in ensuring proper BZP-dispensing practices. These indicate the need for continuous professional development and stricter enforcement of dispensing regulations to improve pharmacy practices and prevent unauthorized BZP dispensing.

332. Manyanga, V.P., Mwakyomo, J., Mushi, H., *et al*… (2025). Geospatial Quantification of Antiretroviral Therapy Consumption in Tanzania (2017-2021) Using the WHO Defined Daily Dose Methodology. *medRxiv*, Vol. 2025-12. Doi:10.64898/2025.12.06.25341745

Abstract

Objectives: To quantify national and regional trends in antiretroviral therapy (ART) consumption in Tanzania from 2017 to 2021 using the World Health Organization (WHO) Defined Daily Dose (DDD) methodology and to describe shifts in regimen composition during the transition todolutegravir-based therapy. **Methods:** A retrospective descriptive analysis was conducted using programmatic dispensing data from the National AIDS and Sexually Transmitted Infections Control Programme (NASHCoP). ART dispensing records from all reporting HIV Care and Treatment Clinics were harmonized with WHO ATC/DDD codes and linked to annual population estimates. Consumption was expressed as DDDs per 1,000 inhabitants per day. Temporal trends, therapeutic class distributions, and regional variations were analyzed using Power BI and R. Short-term national forecasts until 2025were modelled using quadratic regression. **Results:** Between 2017 and 2021, ART consumption increased from 12.2 to 27.1 DDD/1,000/day(compound annual growth rate, 22.4%), with a five-year mean of 19.7 DDD/1,000/day. A total of 2,108,707 unique patients accounted for 39.7 million clinic visits in the study. The average number of visits per patient per year declined from 6.78 to 5.24, consistent with the expansion of the multi-month dispensing program (MM). Nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs) remained the core therapeutic class, whereas the use of integrase strand transfer inhibitors (INSTIs) has increased by more than tenfold since 2019. Dolutegravir (DTG) -based combinations (TDF/3TC/DTG) have become the predominant regimen, accounting for approximately 70% of dispensed DDDs by 2021. Regional variation narrowed over time, although the highest consumption persisted in Dar es Salaam, Mwanza, and Dodoma. Forecastmodelling indicated continued moderate growth through 2025.**Conclusions:** The national ART consumption in Tanzania more than doubled between 2017 and 2021, reflecting the expansion of treatment coverage, evolution of differentiated service delivery, and the transition to DTG-based regimens. The routine computation of DDD per 1,000 inhabitants per day provides a standardized and feasible metric for monitoring ART utilization within national HIV programs.

333. Manyanga, V.P., Nyalali, N.W., Makoye, P.M., *et al*… (2025). The Spatial Distribution and Distance-based Regulatory Compliance of Private Medicine Outlets in Two Urban Districts of Dar es Salaam, Tanzania. *Cureus*, Vol. 17(12). Doi:10.7759/cureus.100044

Abstract

Background and objective: Pharmacies and Accredited Drug Dispensing Outlets (ADDOs) play a central role in expanding access to essential medicines in low- and middle-income countries. In Tanzania, national regulations mandate minimum separation distances to prevent excessive clustering and help ensure that all communities have reasonable access to essential medicines. However, the extent of compliance in rapidly urbanizing districts remains unclear. This study aimed to examine the spatial distribution of private medicine outlets (PMOs) in the Kinondoni and Ubungo districts of Dar es Salaam and assess adherence to regulatory distance requirements.

Methods: A cross-sectional geospatial survey was conducted across 18 urban centers. Outlet coordinates were collected through field enumeration using Redcap (Research Electronic Data Capture) mobile tools between July 14, 2019, and September 6, 2019. Official ward boundary shapefiles were obtained from the National Bureau of Statistics. Spatial patterns were analyzed by mapping PMO locations, estimating ward-level densities, calculating nearest-neighbor distances, and evaluating compliance with Tanzania's minimum distance regulations of 150 m for same-type outlets and 500 m for ADDO-pharmacy pairs. **Results:** A total of 377 PMOs were mapped, comprising 232 (61.5%) ADDOs and 145 (38.5%) pharmacies. The outlet distribution was highly uneven: some wards demonstrated dense clustering, while others showed sparse coverage. The median nearest-neighbor distance was 753 m, although distances ranged from <1.0 m to over 6.0 km. Overall, 110 (29.2%) of the outlets fell below the regulatory spacing thresholds. Compliance levelswere similar across outlet types. **Conclusions**: Marked clustering and substantial non-compliance with minimum distance regulations were observed in Kinondoni and Ubungo. While dense clustering may improve convenience in some neighborhoods, persistent gaps in other areas suggest emerging spatial inequities. Geospatially informed regulatory planning is required to enhance equitable access to essential medicines. The observed 29.2% noncompliance rate highlights a meaningful regulatory gap, indicating that existing minimum-distance rules are not consistently implemented. This has practical implications for market saturation, potential unfair competition, and uneven access across neighborhoods, reinforcing the need for targeted inspections and more proactive spatial oversight.

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334. Manyangu, G.J., Khan, S., Wajanga, B., *et al*… ((2025). Comparing Life's Simple Seven between newly diagnosed, ART-naive people living with HIV and HIV-uninfected adults in Tanzania: clues for cardiovascular disease prevention. *AIDS care*, Vol. 37(2). Doi:10.1080/09540121.2024.2445198.

Abstract

Background: Cardiovascular disease (CVD) represents a major cause of premature mortality in people living with HIV (PLWH). There is a need to characterize the cardiovascular health profiles of PLWH to appropriately guide primary prevention efforts, particularly in settings like Sub-Saharan Africa, where there is a high burden of HIV and limited resources. A cross-sectional analysis was conducted on a cohort of newly diagnosed PLWH and HIV-uninfected adults recruited from three HIV clinics in Mwanza, Tanzania. Modified Life's Simple 7 definitions were applied to the cohort to compare cardiovascular health profiles between the two study groups using Poisson regressions. Pooled cohort equation (PCE) scores were also calculated to compare the distribution of CVD risk between the two groups. Our study included 995 study participants (492 PLWH, 503 HIV-uninfected). PLWH had a higher prevalence of ideal body mass index (75%), ideal blood pressure (56%), and ideal total cholesterol but a lower prevalence of ideal smoking (84%) and ideal physical activity (39%) than HIV-uninfected counterparts. PCE scores were low throughout the study population (76.5%), regardless of HIV status. Primary prevention of CVD in newly diagnosed people living with HIV in Africa may need to focus on smoking cessation and optimization of physical activity levels.

335. Mapunda, L., Mwingwa, A., Kamori, D., *et al*… (2025). Co-existence of two blaNDM-5 and blaOXA-181 on distinct plasmids in a carbapenem-resistant Klebsiella pneumoniae from a tertiary hospital, Tanzania. *Journal of Global Antimicrobial Resistance*, Vol. 41. Doi: 10.1016/j.jgar.2024.12.011.

Abstract

Purpose: To understand the mechanisms of carbapenem-resistant Klebsiella pneumoniae (CRKP) from Tanzania and characterize the genomes carrying the carbapenemase genes. **Methods:** Clinical CRKP isolates were selected from ongoing antimicrobial resistance surveillance at Muhimbili National Hospital, Dar es Salaam, Tanzania. Whole-genome sequencing was performed utilizing Illumina and Nanopore platforms. **Results**: A total of twelve CRKP were analyzed in this study. Six different multilocus sequence types were detected, six isolates were sequence type ST437 and one belonged to a novel sequence type, ST6258. Resistance to carbapenems was multifactorial with co-existence of blaNDM-5 and blaOXA-181 in six CRKP, and blaNDM-5 and blaOXA-232 in one isolate, and chromosomal mutation of ompK36 and ompK37 in all twelve isolates. All the CRKP carried genes conferring resistance to 3rd generation cephalosporins, penicillin, aminoglycosides, fosfomycin, trimethoprim-sulfamethoxazole, and quinolones. The hybrid assemblies of 001BS and 002PS2 revealed that they harbored seven and six different plasmids, respectively. The 001BS carried two blaNDM-5 on distinct plasmids. The first blaNDM-5 gene was carried on an IncFIB(K) plasmid; and the second blaNDM-5 co-existed with blaOXA-181 on the ColPK3-IncX3 plasmid. In contrast, in 002PS2 the blaNDM-5 and blaOXA-181 were carried on the IncFIB(K)-IncFII(K) and ColPK3-IncX3 plasmids, respectively. The genetic environment of the blaNDM-5 gene on both plasmids was flanked by the same genetic core IS26–IS30–blaNDM-5 –ble–trpF–DsbD–ISCR1–sul1– QacE–IS3000. **Conclusion:** Clonally related CRKP ST437 with multiple co-existing carbapenemase genes were detected for the first time at the tertiary hospital in Tanzania. The existence of this high-risk clone poses a great risk for further spread at our facility. ***Keywords:*** *Klebsiella pneumoniaebeta-lactamase blaNDM-5beta-lactamase OXA-181Coexistence blaNDM-5 blaOXA-181Plasmids Klebsiella pneumoniaeTanzaniaDrug resistanceBacterial.*

336. Mapunjo, S., Mbwasi, R., Nkiligi, E.A., *et al*… (2025). National consumption of antimicrobials in Tanzania: 2020–2022. *JAC-Antimicrobial Resistance*, Vol. *7*(2). Doi:10.1093/jacamr/dlaf026.

Abstract

Background: The Global Leaders Group on Antimicrobial Resistance (AMR) beckoned nations to share surveillance data on antimicrobial consumption (AMC) and AMR while promoting access to essential antimicrobials in countries with the highest burden of AMR. **Objectives:** To analyze

findings of the national-level AMC (years 2020–2022), building on our prior work (2017–2019), and to assess any emerging trends. **Methods:** Data were obtained from the Tanzania Medicines and Medical Devices Authority, Tanzania Medical Stores Department, and from local manufacturers. **Results:** The average defined daily dose (DDD) per 1000 inhabitants (DID) was 38.27 ± 5.17. Compared to 2020, macrolides had a nearly 3-fold increase in 2021 and 2022 driven by azithromycin (4.85 ± 2.85 DID), mainly associated with inappropriate use during the COVID-19 pandemic. In 2020, private-sector consumption accounted for 75.73% of the total, which increased to 84.02% in 2021 and then slightly decreased to 66.82% in 2022. The Access category antimicrobials met the World Health Organization target of 60% national consumption, while the Watch category has shown a steady increase in 2021 and 2022.**Conclusion:** The continued increase in AMC in the private sector calls for urgent antimicrobial stewardship targets, including routine reporting by the Access, Watch and Reserve categories.

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337. Mark, K.P., Mushy, S.E., Puchner-Hardman, M., *et al*... (2025). Needs assessment of training midwifery, nursing, and medical students in sexual and reproductive health care for people with disabilities in Tanzania. *Disability and health journal*, Vol.19 (1). Doi: 10.1016/j.dhjo.2025.101919.

Abstract

Background: Tanzania has a sexual and reproductive health (SRH) crisis, a particularly vulnerable population of people with disabilities (PWD), and a need for healthcare providers trained in PWD-focused SRH care. However, SRH services are limited, and the inclusion of PWD in SRH efforts is rare in Tanzania. The current study examined the feasibility and acceptability of addressing this critical gap by training future healthcare professionals in SRH for PWD. **Objective:** To determine the feasibility and acceptability of a PWD-focused SRH training to be delivered to healthcare students attending Muhimbili University of Health and Allied Science (MUHAS) in Dar es Salaam, Tanzania. **Methods:** A mixed methods design via a survey taken by 409 medical, nursing, and midwifery student participants was employed to determine the feasibility and acceptability of a new curriculum focused on the SRH needs of PWD. Data were assessed using descriptive statistics and reflexive content analysis. **Results:** Data indicate that 83.6% and 97.6% of medical, nursing, and midwifery students believe that an SRH training centered on the needs of PWD is feasible and acceptable, respectively. Moreover, findings indicated that 50.4% of medical, nursing, and midwifery students at MUHAS receive little to no training in SRH for PWD. Participants' qualitative responses indicated that the training would improve the quality of life for PWD, address their vulnerability and healthcare neglect, and benefit society**. Conclusion:** MUHAS students find a PWD-focused SRH training to be feasible, acceptable, and needed, presenting an opportunity for great impact.

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338. Marombe, T. I., Iseselo, M. K., Kisakeni, S. (2025). Satisfaction of Nursing Care and its Associated Factors Among Patients with Coronary Artery Disease at Jakaya Kikwete Cardiac Institute, Dar es Salaam, Tanzania: A Cross-Sectional Study. *Nursing Research and Practice*, Vol. 1(9954455). Doi:10.1155/nrp/9954455.

Abstract

Background: Patient satisfaction is a measure of the effectiveness of care, particularly in patients with coronary artery disease (CAD). It has been demonstrated that one of the factors affecting a patient's quality of life is their satisfaction with the nursing care they receive. Inadequate nursing care can have negative effects on patients' satisfaction and, if appropriate action is not taken, may deter patients from visiting hospitals. This study aimed to assess the level of satisfaction with nursing care and its associated factors among patients with CAD. **Methods:** A cross-sectional hospital-based study was conducted at the Jakaya Kikwete Cardiac Institute (JKCI) in Dar es Salaam, Tanzania. A total of 150 respondents were recruited using a simple random sampling technique. Data were collected using a standardised questionnaire. Univariate and multivariate logistic regression analyses were performed to assess the association of sociodemographics, level of patient satisfaction and factors associated with patient satisfaction with nursing care. A p value of < 0.05 was considered statistically significant. **Results:** The mean age of respondents was 58.78 ± 15.16 years, with the majority, 81 (54%), being males. Most 106 (70.7%) respondents were married, and 103 (68.7%) were peasants. Most respondents, 127 (85%), were satisfied with nursing care. Patients with higher education and treatment category with VIP services had significantly reduced chances of satisfaction with nursing care (adOR 0.478, 95% CI: 0.094–0.632, p = 0.012) and adOR 0.234 of 95% CI: 0.074–0.432, p = 0.002, respectively. Other factors were not statistically associated with satisfaction with nursing care. **Conclusion:** The majority of patients were satisfied with the nursing care. Treatment categories by VIP, insurance and higher education were associated with satisfaction with nursing care. Further research is needed to qualitatively assess the aspects of nursing care that lead to the satisfaction among patients with CAD.

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339. Martine, K., Paul, L., Qwarse, M., *et al*... (2025). Exploring Glutathione and Hypotaurine as Promising Antibrowning Agents: Safer Alternatives to Sulphites for Food and Beverage Preservation. A Concise Review. *Journal of Food Processing and Preservation*, Vol. *2025*(1). Doi:10.1155/jfpp/8283874.

Abstract

Oxidative browning poses a significant challenge in maintaining the visual appeal and nutritional quality of fresh-cut food products and beverages. Traditional sulphites have been widely utilised for browning inhibition; however, concerns regarding their safety and allergenic potential have sparked the exploration of alternative options. This minireview examines the promising roles of glutathione and hypotaurine as effective antibrowning agents, offering safer alternatives to sulphites in food products preservation. Glutathione, a tripeptide antioxidant, effectively inhibits polyphenol oxidase (PPO) through its unique structure and multifaceted antioxidative mechanisms. Hypotaurine, a cysteine derivative, has also shown success in mitigating enzymatic browning across various food categories. Therefore, both compounds demonstrate key advantages over sulphites and nonsulphite alternatives, including improved safety profiles, reduced toxicity, and enhanced versatility across complex food matrices. Recent research findings indicate that glutathione and hypotaurine not only prevent oxidative browning but also extend shelf life, maintaining sensory attributes and contributing to overall food safety. Their potential for broader

applications in food preservation underscores their viability as sustainable and effective antibrowning agents.

340. Masatu, J., Abdulahi, M. (2025). The prevalence and determinants of male involvement in antenatal care: A cross-sectional study in primary health care facilities in Dar es Salaam, Tanzania. *Adv Women's Health*, Vol. 4(1). Doi:10.17352/awh.000004.

Abstract

Male participation in Antenatal Care Services (ANC) is critical to improving mother and child health outcomes since it promotes early access to the formal health system, encourages competent delivery attendance, and supports baby and family well-being. Despite its significance, male participation in ANC is still a challenge in Africa and Tanzania. We aimed to determine the prevalence and determinants of male ANC participation at facilities in Ubungo Municipal Council. The cross-sectional study used simple random sampling strategy to obtain 126 men by Kobo questionnaire. Descriptive statistics, modified Poisson regression assessed determinants of male involvement whereas variables with p-values < 0.2 in multivariable model and statistical significance was determined at p < 0.05. The 126 men (18 to 56 years, mean age = 34.5, SD = 6.2), Participants (62.0%) from Sinza District Hospital, primary education (61.1%). The prevalence was 84.9% (95% CI: 78.2%-90.3%). Determinants were (APR = 2.18; 95% CI: 1.17-4.06), education (APR = 1.88; 95% CI: 1.31-2.71), married (APR = 1.72; 95% CI: 1.11-2.26), income (APR = 1.51; 95% CI: 1.12-2.03 and know ANC (APR = 4.92; 95% CI: 2.71-8.94). Dispensary (APR = 1.98; 95% CI: 1.05-3.39), neutral/welcoming (APR = 2.12; 95% CI: 1.15-3.91), waiting time (APR = 0.61; 95% CI: 0.39-0.95), friendly ANC (APR = 0.61; 95% CI: 0.39-0.94), norms (APR = 0.59; 95% CI: 0.38-0.91), past ANC (APR = 1.67; 95% CI: 1.09-2.56), no fear HIV testing (APR = 1.52; 95% CI: 1.08-2.14)

341. Masatu, J., Habib, I., Kishimba, R., *et al*... (2025). Prevalence and determinants of caesarean sections among women in selected health facilities in Njombe region, Tanzania. *Scientific Reports*, Vol. 15(1). Doi: 10.1038/s41598-025-10407-1.

Abstract

When medically required, Caesarean sections (CS) can help to reduce maternal and newborn mortality significantly. However, excessive or non-indicated CS causes serious health hazards. Tanzania's national CS rate is 13%, with the Njombe area reporting a significantly higher rate of 29% in 2022 nearly double the WHO-recommended maximum of 15%. This study investigated the prevalence and risk factors for CS among postpartum mothers in Njombe health facilities. A facility-based cross-sectional investigation was carried out utilizing a multistage cluster sampling method. A total of 567 post-delivery women aged 15–44 years from six health facilities were surveyed using Kobo Collect structured questionnaires. Demographic data were analyzed using descriptive statistics. Modified Poisson regression was used to investigate the relationships between independent variables and CS delivery. The multivariable model included variables with p-values < 0.2 from the bivariable analysis. Statistical significance was set at $p < 0.05$.

Participants' average age was 25.8 years (SD = 5.86). The CS prevalence was 45.5% (95% confidence interval: 41.0-49.9%). Factors associated with higher likelihood of CS delivery included being single (aPR = 1.25; 95% CI: 1.01–1.74), late first ANC visit (aPR = 1.52; 95% CI: 1.10–1.42), maternal height ≤ 150 cm (aPR = 1.24; 95% CI: 1.01–1.63), birth weight > 4.1 kg (aPR = 1.67; 95% CI: 1.07–2.27), gestational age ≥ 43 weeks (aPR = 1.49; 95% CI: 1.05–2.20), and referral from health centers (aPR = 2.10; 95% CI: 1.50-3). Delivering in private facilities also increased the likelihood of CS, albeit not significantly (aPR = 1.13; 95% CI: 0.75–1.67). The CS rate in Njombe substantially exceeds national and worldwide averages. Targeted initiatives are urgently required to encourage evidence-based decision-making, improve ANC scheduling, and strengthen monitoring of health insurance and private sector influences on CS delivery. Policy changes should focus on enforcing clinical criteria and increasing accountability in maternity healthcare.

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342. Masoi, T.J., Kibusi, S.M., Sirili, N., (2025). Development and validation of context-specific components of obstetric violence: Experiences from the central zone of Tanzania. *PLoS One*, Vol. 20(6). Doi: 10.1371/journal.pone.0326362.

Abstract

Background: Despite the known consequences of obstetric violence, studies have encountered challenges in defining and fully understanding obstetric violence. This difficulty arises from a relative scarcity of research addressing the definition of obstetric violence across various cultures and contexts. As a result, there is a lack of consensus regarding the operational definitions of the components of obstetric violence and variations that may be influenced by geographical and cultural factors. **Objective:** This study describes the process of developing and validating the context specific components of obstetric violence in the Central Zone of Tanzania. **Methods:** An iterative mixed-methods design was used, using the following stages; 1. collecting and analyzing qualitative data on context specific components of obstetric violence along with a literature review 2. assessing the content validity with 24 maternal health experts and face validity with 27 postnatal mothers and nine health care providers. Descriptive analysis was employed to analyse participants' characteristics and Likert scale responses from experts, postnatal mothers and health care providers. Item-level Content Validity Index (I-CVI) and Item-face Validity Index (I-FVI) was computed for each component. **Results:** Seven categories of obstetric violence components were identified through this process. These included: physical violence, lack of supportive care and treatment, subjugation care, an unfavorable care environment, sexual violence, verbal violence, emotional and psychological violence. In addition, 24 subcategories of obstetric violence were identified. The Item-Level Content Validity Index (I-CVI) ranged from 0.791 to 0.958, while the Item-Face Validity Index (I-FVI) ranged from 0.777 to 0. 925.**Conclusion:** The validated components of obstetric violence in Tanzania will contribute to a better understanding of the issue within the Tanzanian context. This in turn, may facilitate a more accurate assessment of the magnitude and impact of obstetric violence while helping to identify key areas for intervention and policy development to promote respectful maternity care.

343. Masoi, T.J., Mselle, L.T., Kibusi, S.M., *et al*… (2025). "Being Treated Like an Infant Who Doesn't Know Anything" Obstetric Violence from Perspectives of Women, Health Care Providers and Key Community Informants in Central Zone Tanzania: A Qualitative Exploratory Case Study. *Sage Open Nursing*, Vol. 11. Doi:10.1177/23779608251361015.

Abstract

Background: Violence during pregnancy, childbirth, and after childbirth is a critical issue globally. There remains a lack of consensus on operational definitions of the components across different cultures globally since the definitions of respect, disrespect, and violence can differ among cultures, traditions, and places. Obstetric violence presents a significant barrier to seeking facility-based care during pregnancy and childbirth and instead women may opt for home deliveries with unskilled attendants. As a result, some experience complications thus contributing to the high prevalence of maternal mortality and morbidity. **Objective:** To explore the contextual components of obstetric violence as perceived by postnatal mothers, health care providers and key community informants in central zone Tanzania. **Methodology:** An exploratory qualitative case study employed in-depth interviews with purposefully selected 24 postnatal mothers, 18 healthcare providers, and 4 religious leaders. Additionally, 6 focus group discussions were conducted with male partners, community health workers, and 10-cell leaders. Data analysis followed qualitative content analysis process, incorporating both inductive and deductive approaches. **Results:** Nine categories of obstetric violence experienced by women during health facility care emerged from the analysis. These categories are lack of supportive care and treatment, autonomy limitations, non-consented care, compromised privacy and confidentiality, painful routine procedures that are not evidence-based, verbal violence, sexual violence, stigma and discrimination, and emotional violence. Additionally, six categories of obstetric violence emerged related to experiences of women at the community level. They included: forceful insertion of herbs into the vagina, verbal violence, physical violence, psychological violence, forced home delivery, and inappropriate sexual practices. **Conclusion:** Contextual components gathered by this study help to better define obstetric violence in the Tanzanian context and serve as a reference. This might help to validate measurement methods and provide a pathway for developing evidence-based interventions to reduce obstetric violence and promote respectful maternity care.

344. Masuki, H., Mhina, C., Sanyiwa, A. (2025). Retinoblastoma in Tanzania; Survival and Prognostic Factors: A Retrospective Cohort Study. *Journal of Ophthalmology of Eastern, Central and Southern Africa (JOECSA)*, Vol. 13(02). Doi:10.64666/joecsa.2024.66.

Abstract

Objective: To determine the 3-year survival rate and prognostic factors among patients with retinoblastoma diagnosed at Muhimbili National Hospital from January 2016 to December 2018.**Methods:** A retrospective cohort study was conducted. Participants were consecutively recruited. Data were collected using a questionnaire. Variables included demographics, clinical presentation, treatment, and survival time. Statistical analysis was performed using Stata version11. Kaplan-Meier survival analysis was used to assess the survival rates, while the log rank

test determined statistical significance. The hazard ratios were calculated using Cox regression. A P value < 0.005 was considered statistically significant. **Results:** A total of 166 children were studied, with 69.3% having unilateral retinoblastoma and 30.7% bilateral. Fifty percent of the children were females. The overall mean age at diagnosis was 25.56 ± 15.56 months. The participant's mean age at diagnosis was 18.7± 11.6 months for bilateral and 31.3± 20.4 months for unilateral retinoblastoma. The most common complaints were leukocoria (90.4%) and eye protrusion (46.4%). The mean duration of symptoms was 7.9±5.3 months, and the mean total delay time was 9.4±5.6 months. At presentation, 51.8% of the study participants had disease stage 3 and 4 according to the International Retinoblastoma Staging System. The 3-year Kaplan-Meier survival rate was 52.3%. Multivariate Cox regression analysis identified age at diagnosis > 24 months (p=0.001), failure to complete treatment (p=<0.001), and extra-ocular disease invasion (p=0.008) as factors associated with lower survival rates. **Conclusion:** The 3-year survival rate of patients with retinoblastoma in our setting was 52.3%. Age at diagnosis of >24 months, failure to complete treatment, and extraocular disease invasion were associated with a lower survival rate.

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345. Matiku, S., Murenzi, G., Rugengamanzi, E., *et al*... (2025). Androgen receptor overexpression by immunohistochemistry in malignant salivary gland tumors in Tanzania. *BMC cancer*, Vol. 25(1). Doi:10.1186/s12885-024-13368-2.

Abstract

Background: Malignant salivary gland tumors (SGTs) present diagnostic challenges and limited treatment options. This study aims to determine the proportion of malignant SGTs overexpressing the androgen receptor (AR) by immunohistochemistry (IHC) and its association to age, sex, anatomical site, histopathological subtype and grade which may inform customized treatment approaches. **Methodology:** This was a retrospective cross-sectional analytical study of archived paraffin embedded tissue blocks of malignant SGTs diagnosed at MNH Central Pathology Laboratory (CPL) from January 2019 to December 2022. IHC staining using a monoclonal Rabbit Anti-Human AR and interpretation was done using Allred score. The AR overexpression was assessed and compared by age, sex anatomical site, histological subtype and histological grade of the tumor. **Results:** Out of 158 (60%) malignant SGTs, 115 cases underwent AR IHC where, mean age was 49.7 ± 17.9, females were 61(53%). Major salivary gland involvement was (67)58.1%, predominantly parotid gland 35(52.2%), Adenoid cystic carcinoma and Mucoepidermoid carcinoma were the most common tumors accounting for 38(33%) and 22 (19%) respectively. High grade tumors were prevalent accounting for 53(46.1%). Androgen receptor overexpression was observed in 49(42.6%). A significant association was observed between AR and parotid gland anatomical location (aOR = 3.45, 95% CI = 1.1–10, $p = 0.027$) and high-grade tumors (aOR = 5.1, 95% CI = 1.4–19, $p = 0.014$). No significant association between AR overexpression and age (p-value 0.253), sex (p-value 0.708) and histological subtype (p-value 0.557), although highest proportion were seen in salivary duct carcinoma (71.4%). **Conclusion:** High-grade malignant SGTs and parotid gland location are associated with AR overexpression. This suggests that androgen deprivation therapy (ADT) has the potential to play a role in the management of advanced SGTs. However, large-scale studies that will include comprehensive molecular

investigations and efficacy exploration of ADT are recommended to clarify our current findings and inform therapeutic options for patient with high grade and recurrent tumors.

346. Matuja, S.S., Tunkl, C., Roushdy, T., *et al*… (2025). Implementing Acute Stroke Services in Sub-Saharan Africa: Steps, Progress, and Perspectives from the Tanzania Stroke Project. Doi:10.1159/000545954.

Abstract

Introduction: Stroke is a leading cause of morbidity and mortality globally, with Africa bearing a disproportionately high burden of poor outcomes. In sub-Saharan Africa, acute stroke care remains inconsistent, with organized stroke units being either absent or rarely available, contributing to the high stroke mortality rates in the region. To address this issue, the Tanzania Stroke Project (TSP) was launched, aimed at establishing acute stroke services at two of the largest tertiary care centers in collaboration with the Tanzanian Ministry of Health, the World Stroke Organization, and Hospital Directorates. Methods: TSP utilized a three-tier implementation approach to establish a more organized stroke care system in two large academic hospitals. Here, we detail the process of this initiative, which took place between August 2023 and August 2024. The three-tier approach included (1) the establishment of stroke registries; (2) the training of healthcare workers (HCWs); and (3) the development of acute stroke protocols and establishment of stroke units at Muhimbili National Hospital-Mloganzila and Bugando Medical Center in Tanzania. Results: In tier one (stroke registry), two comprehensive stroke registries were established, including 460 adults (mean age 60 ± 15 years). Hemorrhagic stroke was the most common subtype, accounting for 59% of cases (n = 269). Premorbid hypertension was the most prevalent risk factor, affecting 81% (n = 373) of the patients. More than half of patients (58%, n = 171) arrived at the hospital after 24 h from stroke symptoms. Only 11% (n = 50/452) had documented swallowing screenings, and among patients with intracerebral hemorrhage; 11% (n = 28/251) achieved the target for blood pressure control, while 47% (n = 99/213) met blood glucose control targets. The in-hospital mortality rate was 27% (n = 93/340). In tier two (training of HCWs), extensive evidence-based mentorship training was provided with higher participation rates among HCWs at Bugando Medical Center compared to Muhimbili National Hospital-Mloganzila (57% [29/51] vs. 23% [7/31], p = 0.002). In tier three (stroke unit protocols), stroke protocols were developed based on the training and current evidence, leading to the establishment of dedicated stroke units at each facility, with a minimum of 8 beds per unit. The full impact of these implementations has yet to be fully assessed. Conclusion: This was the first initiative to implement stroke services at two large tertiary healthcare centers in Tanzania. Our findings highlight the importance of multilevel stakeholder engagement through a 3-tier approach in countries starting to establish stroke services and the need for ongoing quality-of-care monitoring and continuous efforts to sensitize both HCWs and the broader community.

347. Matundura, J.O., Mollel, J.T., Miah, M., *et al*... (2025). Bioactive 2-arylbenzofuran and chalcone derivatives from Morus mesozygia Stapf. *Fitoterapia,* Vol. 106871. Doi: 10.1016/j.fitote.2025.106871.

Abstract

The phytochemical investigation of the stem bark of Morus mesozygia afforded the fourteen known secondary metabolites moracin N (1), moracin S (2), mulberrofuran L (3), moracin C (4), moracin L (5), moracin M (6), moracin D (7), artopithecin A (8), isobavachalcone (9), morachalcone A (10), 2,2′,4,4′-tetrahydroxychalcone (11), 3β-acetoxy-urs-12-en-11-one (12), betulinic acid (13), and 4,4′-diphenylmethane-bis(methyl) carbamate (14). Their structures were elucidated by NMR spectroscopic and mass spectrometric analyzes and their cytotoxicity (CC_{50} for HEKa, IMR-90, and HPrEC), anti-inflammatory (TNF-α, NF-κB, and NO inhibition), antibacterial (MIC), antitumor (IC_{50}), and antiviral (CPE-based and plaque reduction assays) activities were studied. Moracin D (7) showed potent anti-inflammatory activity towards the release of NF-κB (0.57 <IC50 <1.21 μM). 3β-Acetoxy- urs-12-en-11-one (12) had potent antibacterial activity towards Bacillus subtilis and Micrococcus luteus, with MIC values of 12.71 and 15.59 μM, respectively. Moracin M (6) had the highest antitumor activity (IC50 =19.80 μM) against SK-MEL-28 human melanoma cells. Isobavachalcone (9) exhibited activity against Human Rhinovirus 2 (HRV-2; IC50 =7.01 μM) with a selectivity index (SI) =9.1 as compared to HeLa cells. None of the compounds exhibited significant antiviral activity against respiratory syncytial virus (RSV) or herpes simplex virus type 2 (HSV-2). Out of the isolated compounds, moracin D (7), isobavachalcone (9) and marsformoxide B (12), may be considered to be promising leads for the development of anti-inflammatory (NF-κB), antiviral (HRV-2), and antibacterial (B. subtilis and M. luteus) agents, respectively

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348. Mawalla, W.F., Achola, C., Nabalende, H., *et al*… (2025). Rituximab for children with EBV-positive Burkitt lymphoma in East Africa. *Blood Advances*, Vol. 9(10). Doi:10.1182/bloodadvances. 2024015234.

Abstract

The addition of rituximab to the chemotherapy backbone was shown to significantly improve outcomes of children with aggressive high-grade lymphomas in high-income countries. However, data on its safety and efficacy in children with Epstein-Barr virus (EBV)–positive Burkitt lymphoma (BL) are limited. We conducted a prospective nonrandomized observational study in East African patients aged ≤25 years with confirmed BL. Patients received either the International Network for Cancer Treatment and Research (INCTR)–based standard chemotherapy (cyclophosphamide, vincristine, and methotrexate [COM]) or rituximab plus standard chemotherapy (R-COM). The primary end point was safety. The secondary outcomes were event-free and overall survival and cost-effectiveness of incorporating rituximab. Primary analyses were conducted in the intention-to-treat population. The median follow-up was 23 months. Safety analyses included 72 patients: 32 in the COM group and 40 in the R-COM group. Grade ≥3 adverse events occurred in 18% of R-COM patients and 16% of COM patients. With respect to treatment outcomes at 12 months, 5 events were observed in the R-COM group and 14 in the COM group. The 12-month event-free survival was 67% with R-COM and 43% with COM (hazard ratio [HR], 0.49; 95% confidence interval [CI], 0.24-0.98; *P* = .045). There were 8 deaths in the R-COM group, whereas 16 patients died in the COM group (HR, 0.32; 95% CI, 0.14-0.75; *P* = .009). R-COM was particularly effective in advanced-stage disease. The addition of rituximab to the

INCTR-based protocol (COM) for EBV-positive BL has been observed to be safe and feasible in experienced centers in East Africa and saves lives.

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349. Mawi, N.E., Rong-Fang, H., Paulo, H.A., *et al*... (2025). Prevalence and determinants of effective breastfeeding technique among early postpartum mothers in Fuzhou, China: A cross-sectional study. *PloS one*, Vol. 20(2). Doi: 10.1371/journal.pone.0319408.

Abstract

Background: Breastfeeding technique (BFT) is determined by the mother's and infant's positioning, the infant's attachment to the breast, and the infant's suckling behavior. Understanding breastfeeding mothers' skills is crucial for clinical practice and for designing interventions to improve breastfeeding practices. This study aimed to determine the prevalence and determinants of effective BFT among early post-partum mothers. **Methods:** We conducted a cross-sectional study among 415 early post-partum mothers in Fuzhou, China. Participants were recruited using a systematic random sampling technique. Data were collected using a self-administered questionnaire and a standardized observational checklist (WHO B-R-E-A-S-T Feed observation form). Descriptive statistics were used to assess the prevalence of effective BFT, and logistic regression was applied to identify its determinants. **Results:** The overall prevalence of effective BFT was 70.4%. After adjusting for potential confounders, the prevalence ratio (PR) of effective BFT was higher among participants with college (PR = 1.20) and postgraduate education (PR = 1.41) than among those with technical education or lower. Participants who attended antenatal care (ANC) (PR = 1.04) and those with BFT knowledge (PR = 1.37) were more likely to practice effective BFT compared to participants who did not attend ANC and did not have such knowledge, respectively. Similarly, those who received BFT counseling during pregnancy or immediately after delivery were 25% and 30%, respectively, more likely to practice effective EBT than those who did not. Conversely, experiencing breast problems was associated with a 42% lower likelihood of practicing effective BFT than those without breast problems. **Conclusion:** Effective BFT is prevalent among early postpartum mothers in Fuzhou, China, with education level, antenatal care attendance, knowledge, and counseling playing significant roles in its practice. Efforts to improve breastfeeding outcomes should focus on enhancing educational interventions and providing targeted counseling during pregnancy and the immediate postpartum period, while addressing breast health issues to mitigate their impact on breastfeeding effectiveness.

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350. Mazingo, G.J., Paulo, H., Mahiti, G.R. (2025). Implementation of a human papillomavirus vaccine programme at secondary schools in Dar es Salaam City Council, Tanzania. *African Journal of Midwifery and Women's Health*, Vol. *19*(2). Doi:10.12968/ajmw. 2023.0034.

Abstract

Background/Aims: Cervical cancer is the most common cancer among women in Tanzania, with the human papillomavirus vaccine being the primary prevention method. Although the vaccine is available for free in Tanzania, uptake remains low. This study aimed to assess the implementation

of a human papillomavirus vaccine programme at secondary schools in Dar es Salaam, Tanzania. **Methods:** This descriptive qualitative study involved 16 purposively selected participants, including five health schoolteachers, nine healthcare professionals, and two council representatives. In-depth interviews were used to collect data, which were recorded, transcribed, and translated into English. Thematic analysis was used to explore the role of teachers, healthcare professionals, and council management in the implementation of the vaccine programme. **Results:** Teachers, healthcare professionals, and council management each had distinct roles and responsibilities in relation to implementing the vaccine programme. However, some teachers and healthcare professionals lacked sufficient knowledge and training on the vaccine, and some private schools did not cooperate with the programme, which were barriers to widespread uptake of vaccinations. **Conclusions:** Teachers, healthcare professionals, and council management play important roles in the human papillomavirus programme. However, a lack of awareness, insufficient training, and reluctance among those at private schools are ongoing issues that require resolution.

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351. Mbunda, S., Mawi, N.E., Iseselo, M.K. (2025). Nurses' perspectives and experience in caring for patients undergoing haemodialysis at Benjamin Mkapa hospital in Dodoma, Tanzania: A qualitative study. *Plos One*, Vol. *20*(6). Doi: 10.1371/journal.pone.0325501.

Abstract

Background: Caring for patients undergoing hemodialysis is a challenge for nurses. Poor quality of care in hemodialysis is reported to have a significant contribution to the high mortality rate among patients. Improving the health outcomes of the patient requires an in-depth exploration of the perspectives and views of nurses working in the hemodialysis unit. However, there is a paucity of information regarding the perspectives and experiences of nurses working in Hemodialysis units, particularly in resource-constrained countries like Tanzania. This study aimed to explore the perspectives and experiences of nurses caring for patients undergoing hemodialysis. **Materials and Methods:** An explorative qualitative study was conducted among nurses working in Hemodialysis units at Benjamin Mkapa Hospital in Dodoma, Tanzania. A purposive sampling method was used to select the participants. Ten in-depth interviews were conducted using a semi-structured interview guide and an audio recorder as the main data collection tools. A thematic analysis approach was used to analyze the data. **Findings:** Three themes and the associated subthemes emerged from this study. 1) Conducive environments for the provision of nursing care 2) Challenges affecting hemodialysis care, and 3) Strategies for improving hemodialysis care. A good nurse-patient relationship, financial incentives, and availability of equipment facilitate the provision of care among patients. Treatment costs, problems in adhering to dialysis prescriptions, and staff shortages were the challenges affecting hemodialysis care. On the other hand, increasing dialysis centres, training nurses, and free health insurance coverage were strategies for improving hemodialysis care. **Conclusion:** The findings highlighted several key aspects related to the perspectives and experiences of providing nursing care for patients undergoing hemodialysis. The conducive working environment, coupled with financial incentives, is an important factor in

improving nurses' care for patients undergoing hemodialysis. However, the high costs related to the utilization of hemodialysis services are the challenge to achieving better outcomes.

352. Mbuya, A.W., Mboya, I.B., Semvua, H.H., *et al.*… (2025). Perceptions and awareness on dust and radon exposures and its effect among tanzanite mine workers in northern Tanzania. Journal of Prevention, Assessment & Rehabilitation, Vol.81(2). Doi:10.1177/10519815251320278.

Abstract

Background: Occupational diseases are somehow attributed to unsafe behaviors by the workers. Low awareness of the effects of exposure to mining dust and negative perceptions on preventive behaviors among workers are among the factors linked to unsafe work conditions. **Objective:** The study objective was to explore awareness and perceptions of miners on exposure to occupational dust in relation to lung health. **Methods:** The study used a phenomenological design involving 44 study participants selected purposefully from the 22 randomly selected mining pits. Participants were interviewed using an in-depth interview (IDI) guide. Transcripts were cleaned in a Microsoft Word document (Microsoft® Word for Mac) and analysed using Dedoose Ver. 9.2.005. Information was coded, then analysed and categorized into specific themes. **Results:** More than 88% of participants perceived the working condition to be unsafe, mostly due to dust. Quote, 'coughers are many, …but most don't seek health services as they claim to be okay'. About 50% of the participants were aware of dust's harmful effects; among them, 40% were aware of silica and silicosis, and that the disease is untreatable. None of the participants was aware of radon gas. **Conclusions:** Health education programs to improve awareness of the negative health effects of exposure to dust and radon gas, dust suppression mechanisms, and personal protection should be strengthened.

353. Mbuyamba, H.T., Ruboha, C.O., Mhidze, A.G., *et al.*.. (2025). Colorectal bezoars as an unusual cause of intestinal obstruction in an autistic child: A case report. *International Journal of Surgery Case Reports*, Vol. 130. Doi: 10.1016/j.ijscr.2025.111325.

Abstract

Introduction and importance: Individuals with Autism Spectrum Disorder (ASD) are at greater risk of experiencing co-occurring gastrointestinal (GI) symptoms, including chronic constipation and acute intestinal obstruction, due to bezoars secondary to pica. This case highlights the importance of clinic evaluation of autistic patients presenting with obstructive gastrointestinal symptoms and its further impact on management of the patients. **Case presentation:** An 11-year-old male patient who has had autism since childhood presented to the emergency department with chief complaint of difficulty in passing stool for one month which was associated with failure to pass flatus, severe abdominal pain and loss of appetite. The relative reported that the patient had a tendency of eating inorganic materials when unsupervised like hair, cushion sponges or sand. An

abdominal mass was palpated at the left lower quadrant of the abdomen. Abdominopelvic CT-Scan showed fecal impaction. The patient was managed conservatively bymanual evacuation under general anesthesia. **Clinical discussion:** Colonic bezoars presenting with obstructive symptoms is a rare finding. It should be thought of in autistic patients with habit of pica. Diagnostic imaging modalities such as X-ray and CT scan are of paramount importance in confirming the diagnosis. Initial management involves conservative measures for uncomplicated cases. **Conclusion:** Bezoars should be considered as cause of intestinal obstruction in patients with habit of pica, especially in those with autism spectrum disorders. Multidisciplinary approach to diagnosis, intervention, and long-term management in assuring patients' overall well-being should sought.

354. Mbwele, B., Joctan, Z.Z., Hawkins, C., *et. al*… (2025). The use of Childbirth Experience Questionnaire (CEQ) and Birth Satisfaction Scale-Revised (BSS-R) in comparing the experiences of mothers with and without HIV in Tanzania. *BMJ Global Health*, Vol. 10(11). Doi:10. 1136/bmjgh- 2024- 016745.

Abstract

Introduction: Mothers' experiences at birth and respectful maternal care are critical to achieving Sustainable Development Goal number 3 in Tanzania. However, little is known about the differences in perinatal experience quality between women with and without HIV. To address this gap, we compared mothers' experience at birth among women with and without HIV. **Methods:** This cross-sectional study was conducted in four Reproductive and Child Health Clinics in Mbeya, Tanzania between June and August 2022. Childbirth experience was assessed among mothers with and without HIV 1 week after birth using the Child Birth Experience Questionnaire (CEQ) and Birth Satisfaction Scale-Revised (BSS-R) questionnaires translated to Swahili. Higher scores reflected better experiences. Using this baseline assessment, bivariate and multivariate linear regression analyses tested the associations between HIV status and other patient factors and child-birth experience scores. **Results:** A total of 1252 mothers were invited, of which 626 (288 (46%) with HIV, mean (SD age 31.9±7.8 years)), were included. Mothers with HIV had lower scores in most CEQ and BSS-R domains compared with mothers without HIV. Significant mean CEQ score differences between mothers with and without HIV were observed in both CEQ and BSS-R scores: After adjusting for demographic factors, regression coefficients, β for CEQ scores were higher among mothers without HIV compared with mothers with HIV for: 'own capacity' 0.73, $p<0.001$, 'Professional support' 0.94, $p<0.001$ and 'Participation' 0.33, $p<0.001$. Similarly, β for BSS-R scores were higher among mothers without HIV for 'Quality of care provision' 0.87, $p<0.001$), 'Women's personal attributes' 0.27, $p=0.002$ and 'Stress experienced' 0.1, $p=0.1$. **Conclusions:** Mothers with HIV in the postpartum period reported poorer CEQ and BSS-R scores compared with mothers without HIV. These results suggest a need to improve respectful maternity care at birth among the mothers with HIV.

355. Mdoe, M.B., Kibusi, S.M., Mselle, L.T. (2025). Knowledge of post-cesarean home care among postpartum mothers in Central Tanzania: Baseline findings from a quasi-experimental study. *Women's Health*, Vol. 21. D0i: 10.1177/17455057251365372.

Abstract

Background: The increasing rate of cesarean section births is a global concern, including in Tanzania, where cesarean section births account for 11% of live births. Following a cesarean section, mothers are commonly discharged early to reduce ward congestion; as a result, they are required to receive care at home. However, evidence indicates that mothers receive limited or no information on post-cesarean section home care, which increases the risk of complications. **Objective:** To assess knowledge of home care after cesarean section birth among postpartum mothers in Central Tanzania. **Design:** An analytical cross-sectional study. **Methods:** This study involved 467 randomly selected post-cesarean section mothers, assessed 24–48 h after birth. Participants' knowledge was evaluated using 60 items that covered essential home care, nutrition, and postnatal services utilization, as well as sexual and reproductive health. Data analysis was conducted using SPSS (version 27). **Results:** Overall, 63% of post-cesarean section mothers demonstrated adequate knowledge of essential healthcare needs, whereas 55% exhibited an inadequate knowledge of nutritional needs and the utilization of post-natal services. However, 93% had inadequate knowledge regarding sexual and reproductive healthcare. Being employed, residing in Dodoma, and having higher education attainment were significantly associated with adequate knowledge of essential healthcare needs, as well as meeting sexual and reproductive health, nutritional, and post-natal service utilization needs. Post-cesarean section mothers with only one prior cesarean section were less likely to possess adequate knowledge about essential healthcare needs and sexual and reproductive healthcare. **Conclusion:** Generally, the knowledge of home care after cesarean section births is inadequate, especially regarding sexual and reproductive healthcare. Comprehensive and standardized health education on home care after cesarean section births is essential for improving knowledge of home care among post-caesarean section mothers and enhancing their recovery.

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356. Mduma, E., Makwani, H., Msuya, S., *et al*… (2025). Isolated Lung Metastasis Prostate Cancer. *Annals of Medicine & Surgery,* Vol. 87(6). Doi: 10.1097/MS9.0000000000003204.

Abstract

Introduction and importance: Prostate cancer is the second most diagnosed malignancy (after lung cancer) in men worldwide. The most common site for metastasis of prostate cancer is bone (84%), followed by distant lymph nodes (10.6%), liver (10.2%), and lung being the least with 9.1%. Isolated lung metastasis is very rare and is present in less than 4.6% of metastatic prostate cancer. This is the first case of de novo isolated lung metastasis of prostate cancer in our setting. **Case presentation:** We report a case of an 81-year-old male of African ethnicity who was diagnosed with isolated lung metastasis prostate adenocarcinoma. The total prostate specific antigen at the time of diagnosis was 182 ng/ml and grade group 3. **Clinical discussion:** The prognosis of prostate cancer patients with pulmonary metastasis is reported to be limited. Prostate cancer patients with lung metastasis have median overall survival of approximately 19 months. **Conclusion:** Although isolated pulmonary metastasis is rare in prostate cancer, it should not be excluded, especially in patients with perineural invasion; however, further investigations are required to exclude metastasis to other sites. ***Keywords:*** *lung metastasis; palliative care; pathology; prostate cancer.*

357. Medarakini, H.G., Simbila, A.N., Weber, E., *et al*... (2025). Performance of shock index, lactate, and physician's gestalt in predicting adverse events among critically ill adult patients at an Emergency Department in Tanzania. *African Journal of Emergency Medicine*, Vol. 15(4). Doi: 10.1016/j.afjem.2025.100914.

Abstract

Introduction: Physicians working in Emergency Departments (ED) must be able to identify critically ill patients likely to deteriorate and prioritize their care. While shock index, point of lactate, and physician gestalt are commonly used in high-income countries to predict adverse events their applicability has not been widely tested in low-middle income countries. **Methods:** A prospective cohort study of all adult patients (≥18 years) triaged to the resuscitation area of Muhimbili ED in Tanzania from 1st September to 31st December 2022. Shock index (SI) on arrival, initial point of care lactate, and the physician's estimates of the probability of an adverse event were recorded. The discriminatory ability of these index tests was compared for the prediction of an adverse event in the ED, using DeLong's test. Sensitivity, specificity, positive and negative predictive values were calculated. For SI, a standard cut-off≥ 1 was used, and for lactate, a standard cut-off> 2 mmol/L was used. For physician gestalt, the optimum cut-off of a 70 % probability of adverse event was determined based on Youden's index. **Results:** A total of 320 critically ill patients were enrolled. SI (AUC = 0.734, 95 % CI 0.658 to 0.810) achieved a sensitivity of 59.3 % and a specificity of 83.1 %. Elevated lactate (AUC = 0.819, 95 % CI 0.76 to 0.88) achieved a sensitivity of 89.8 % and a specificity of 58.2 %. Physician gestalt had an AUC = 0.877 (95 % CI 0.833 to 0.922) using the optimal probability of ≥70 % and achieved a sensitivity of 88.1 % and a specificity of 76.2 %. The AUC of physicians' gestalt was significantly higher than that of SI (p = 0.0008), but was not significantly different from lactate (p = 0.067). The difference in AUC for lactate and SI was also not statistically significant (p = 0.10). **Discussion:** Physicians' gestalt in our setting demonstrated superior predictive performance compared to shock index and a comparable performance to lactate. This supports the use of Gestalt as a low-resource risk stratification tool in emergency settings. However, the accuracy of Gestalt may depend on the physician's experience.

358. Meghji, N.A., Mkoma, I., Ngaiza, A, *et al*... (2025). Mammoplasty With Nipple-sparing Goldilocks Technique in Unilateral Gigantic Juvenile Fibroadenoma. *Plastic and Reconstructive Surgery–Global Open*, Vol. *13*(6). Doi:10.1097/gox. 0000000000006894.

Abstract

Summary: Juvenile fibroadenoma (JFA) represents a distinct subtype of fibroepithelial breast lesions that predominantly affects adolescents and young women. Unilateral JFAs are a rare condition in which surgical intervention focusing on oncoplastic reconstruction may be indicated in cases of severe symptoms or significant cosmetic deformity, with careful consideration of patient age, breast development stage, and long-term outcomes. However, there is limited literature on their surgical management aimed at delivering good aesthetic results to these young

women. We report a case of a 15-year-old woman who presented with a unilateral gigantic JFA causing her severe discomfort and embarrassment due to the size and asymmetry of her breasts. Mammoplasty using a modified Goldilocks technique with nipple–areolar complex preservation via an inferior-based dermal flap was performed to achieve symmetry and good aesthetic results. After a 6-month follow-up, this technique delivered a remarkable aesthetic result with high patient satisfaction. This case highlighted the importance of using current innovative surgical techniques to deliver good aesthetic results to young women with benign breast diseases, as this plays a crucial role in their psychological and physical well-being as they grow up.

359. Mehdi, S.A., Haider, S., Kandil, A., *et al*... (2025). Comparative Study: Mapping Treatment Costs, Best Practices, and Challenges Across Africa. *Frtiers in Public Health*, Vol. 13(1690239). Doi:10.3389/fpubh.2025.1690239.

Abstract

This paper presents the findings of the Siemens Healthineers SHIFT Innovation Pan-Africa Capacity Building Program, which aims to improve access and affordability of healthcare across Africa through knowledge sharing and the transfer of best practices. The study focuses on comparing the cost of treating liver cancer, lung cancer, coronary artery disease (CAD), and stroke in different African countries. These conditions represent a major and growing share of the non-communicable disease (NCD) burden across the African continent. They are also strategic focus areas for Siemens Healthineers due to their high clinical impact, complex diagnostic requirements, and the significant health system resources needed for effective management. These diseases serve as suitable proxies for assessing broader access challenges because they require timely detection, advanced imaging, laboratory diagnostics, specialized treatment pathways, and long-term follow-up care. Any gaps in diagnostic capacity, equipment availability, clinical workflow efficiency, workforce skills, or financing structures become immediately visible along these patient pathways. Comparing the differences with the best practices and challenges of each country, the programme aims to facilitate cross-cultural learning to bridge the gap between high- and low-value treatments. The study draws on detailed data on medical expenditure in several African countries, including public and private health services. Cost differences are analyzed taking into account medical procedures, drugs, diagnostic tests and hospital costs. In addition, the factors contributing to these cost variations, including healthcare delivery, resource availability, regulatory framework, and socio-economic factors, examined to develop standardized strategies to reduce medical costs and improve overall health outcomes. The results of this study will be a valuable resource for policy makers, healthcare providers and stakeholders to identify areas for improvement and take targeted actions. Ultimately, the aim is to improve access, affordability and quality of healthcare across Africa and ensure that life-saving treatments are readily available and affordable for all people on the continent.

360. Mfundo, E.A., Marealle, A.I., Nyondo, G.G., *et al*… (2025). Prevalence and determinants of poor glycemic control among diabetic chronic kidney disease patients on maintenance hemodialysis in Tanzania. Doi: 10.1371/journal.pone.0306357.

Abstract

Background: Poor glycemic control in diabetic chronic kidney disease (CKD) patients on maintenance hemodialysis is a great challenge, resulting in increased risk of morbidity and mortality. This study aimed to determine the prevalence and determinants of poor glycemic control among diabetic CKD patients on maintenance hemodialysis. **Methodology:** A cross-sectional study was conducted in 12 dialysis centers located in four regions of Tanzania from March to June 2023. The study population was diabetic CKD patients above 18 years on maintenance hemodialysis for three months or more. A consecutive sampling technique was used for patient recruitment, and a semi-structured questionnaire was used to collect data. The primary outcome was poor glycemic control were considered when glycated hemoglobin (HbA1c) levels were < 6% or > 8%. Statistical Package for Social Sciences (SPSS) version 23 was used for data analysis. Univariate and multivariable regression models were used to evaluate the determinants of poor glycemic control. A p-value < 0.05 was considered statistically significant. **Results:** Out of 233 enrolled patients, the overall prevalence of poor glycemic control was 55.4%, whereby 27.0% had HbA1c < 6% and 28.33% had HbA1c > 8%. A high risk of HbA1c > 8% was observed among patients who were on antidiabetic medication (2.16 (95% CI: 1.06–4.41) p = 0.035) and those attending dialysis sessions less than 3 times a week (1.59 (95% CI: 1.02–2.48) p = 0.040). The lower risk of HbA1c < 6% was observed in patients dialyzed using glucose-containing dialysates than those dialyzed with glucose-free dialysate (0.57 (95% CI 0.36–0.87) p = 0.020). **Conclusion:** The high prevalence of poor glycemic control among diabetic CKD patients, as revealed by this study, has significant implications. Patients on antidiabetic medication and those with less than three dialysis sessions per week are at a high risk of HbA1c > 8%. Conversely, patients dialyzed using glucose-free dialysates are at a high risk of HbA1c < 6%. Glycemic control in diabetic chronic kidney disease (CKD) patients is a great challenge due to altered glucose homeostasis, gluconeogenesis, tubular glucose reabsorption, and inaccuracy of glycemic regulation metrics [1]. Furthermore, changed renal pharmacokinetics of antihyperglycemic agents (AHA), uremic milieu, and dialysis therapy also contribute to this challenge [2]. Based on the severe risk of hyperglycemia and hypoglycemia in patients with diabetic end-stage renal disease (ESRD), glycemic control is of paramount importance.

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361. Mfuru, G.H., Gembe, A.M., Malima, K.Y. (2025). Evaluation of Dodoma cervical cancer population-based surveillance system at Dodoma, Tanzania, January to December 2022. *Journal of Interventional Epidemiology and Public Health*, Vol. *8*(2). Doi:10.37432/jieph-d-24-02029.

Abstract

Introduction: Cervical cancer has been noted as one of the major life-threatening non-communicable diseases globally. It is the fourth most frequent cancer among women, with an estimated 604 000 new cases in 2020. In Tanzania, it's the leading cause of cancer-related deaths, with an incidence of 625 cases per 1,000,000 women per year. Cervical cancer surveillance is an essential component in cancer control and prevention. However, the performance of this system in Tanzania is not known. We conducted an evaluation to assess the usefulness and performance of the cervical cancer surveillance system in Dodoma to identify areas for improvement.

Methods: We evaluated Dodoma's population-based cervical cancer surveillance system from January 2022 to December 2022. Using the United States Centre for Disease Control and Prevention guidelines for evaluating public health surveillance systems, eight attributes were assessed. For each attribute, indicators were developed and described using quantitative or qualitative methods. Scores for each indicator were categorised as <60%, 60–79%, and >80% as weak, moderate, and good performance, respectively. Document review and interviews were conducted to collect relevant data on system performance. Data were analyzed by Epi Info 7. **Results:** Between January and December 2022, the system recorded 123 cases of cervical cancer. Of these, 76 (62%) were reported by the Makey Pathology Laboratory. Squamous cell carcinoma accounted for 109 cases (89%), and 25 cases (20%) involved patients under 45 years of age. The system performed well on timeliness, acceptability, flexibility, and sensitivity, while it showed moderate performance on data quality and weaker performance in stability. The overall mean score across all eight attributes was 2.4, indicating moderate to good performance. **Conclusion:** Overall system performance was satisfactory, with moderate to good performance. Data have been useful in guiding resource allocation and forming strategic guidelines for the prevention of cervical cancer. To strengthen the system further, efforts should focus on improving financial sustainability as well as data quality.

362. Mganga, S.C., Karanja, B.K., Gesimba, R.M., *et al*… (2025). Optimization of Surface Sterilization Protocol for in Vitro Initiation of African Star Grass (Hypoxis Schimperi). *European Journal of Agriculture and Food Sciences*, Vol. 7(4). Doi:10.24018/ejfood.2025.7.4.931.

Abstract

Background: The micropropagation of African star grass (Hypoxis schimperi) is often hindered by microbial contamination, necessitating an optimized surface sterilization protocol for effective tissue culture initiation. This study investigated the effects of different concentrations and exposure times to sodium hypochlorite (NaOCl) on the initiation of Hypoxis schimperi corm explants. Experiments were conducted at the Egerton University Tissue Culture Laboratory. The study used a completely randomized design (CRD) with factorial treatment combinations of concentration and exposure time replicated thrice. Data were analyzed using SAS (version 9.4) and Microsoft Excel. Corm explants were collected from Njombe, Tanzania, incubated in a growth chamber at 28°C ± 2°C, and exposed to artificial illumination of 2000–2500 lx for 16 h daily over 15 days. Sodium hypochlorite (1%, 2%, 3%, and 4%) was tested at varying exposure times, 10 and 15 min each. **The results:** indicated that the highest contamination rate (93.3%) was observed when explants were treated with 1% NaOCl for 10 min, whereas the lowest contamination rate (46.7%) occurred in explants treated with 4% NaOCl for 15 min. The optimal treatment was determined to be 4% NaOCl for 15 min, which yielded a survival rate of 53.3%. This optimized protocol offers a reliable foundation for initiating micropropagation of Hypoxis. Schimperi, supporting its conservation and potential for large-scale propagation in medicinal plant biotechnological programs.

363. Mgasa, A., Uliza, L., Ally, M., *et al*… (2025). Determinants of Blood Discard at the Muhimbili National Hospital Blood Donation Center Dar es Salaam, Tanzania. Tanzania Journal of Health Research, 26(1). Doi:org/10.4314/thrb. v26i1.6.

Abstract

Background: Blood and blood products are scarce resources worldwide, with Sub-Saharan African countries being the region most affected due to the lack of adequate funding for blood safety programs. In addition to low blood donation rates, blood discard has an essential impact on the blood supply and financial stability of the blood centre due to wastage. This study was conducted to determine factors contributing to blood discarding following donations at the Muhimbili blood donation centre. **Methods:** We conducted a cross-sectional study at Muhimbili National Hospital's blood donation centre for three months. During the study period, 1200 donated blood units at the centre were monitored. Data were collected using a checklist, and frequencies were compared using a statistical package for the social sciences (SPSS) version 23. **Results:** The overall leading cause of blood discard was Transfusion-Transmissible Infections (TTIs), with Hepatitis B virus infection accounting for 4.8% of total blood discard, followed by cold chain failure, which contributed 2.7% of the total discarded**. Conclusion:** Hepatitis B infection was the leading cause of blood discard among TTIs, whereas cold chain failure contributed to blood discard among non-TI reasons.

364. Mgasa, F. P., Oh, S., Mgasa, A, *et al*... (2025). Preventive interventions and diagnostic testing compliance in the management of tropical infections among patients with sickle cell disease in Tanzania. *Parasites, Hosts and Diseases*, Vol. *63*(2). Doi:10.3347/phd.25018.

Abstract

Background: Sickle cell disease (SCD), a genetic hemoglobin disorder, is a major public health challenge in sub-Saharan Africa, particularly in Tanzania, due to its association with high morbidity and mortality from infections. The disease is the leading cause of complications, emphasizing the urgent need for effective preventive strategies and diagnostic protocols. We evaluated the implementation and effectiveness of infection prevention measures and laboratory diagnostic compliance at Nyamagana District Hospital, emphasizing their effects on patient outcomes and survival rates. This retrospective observational study analyzed the medical records of 157 patients with SCD admitted to Nyamagana District Hospital for infection treatment between January 2022 and 2024. The infection profiles, utilization of preventive interventions (recommended drugs, vaccinations, and chemoprophylaxis), and diagnostic laboratory compliance were assessed. Of the 157 participants, 90.4% had at least one infection during their hospital stay, suggesting the vulnerability of this population to infections. Furthermore, malaria emerged as the most prevalent type of infection (40.1%), which is consistent with its endemic status in Tanzania. Other significant infections included unspecified diarrhea (12.5%) and upper respiratory tract infections (10.8%). Despite the high coverage rates of penicillin V prophylaxis (72%) and pneumococcal vaccination (100%), the utilization of malaria chemoprophylaxis and hydroxyurea was low (only 10.8% and 16.6%, respectively). The diagnostic laboratory test compliance, essential for accurate infection management, was moderate at 63.1%, with significant deficiencies

in the blood, urine, and stool cultures and antibiotic susceptibility testing. The administration of hydroxyurea significantly reduced malaria prevalence (P=0.005), fewer vaso-occlusive crises (P<0.001), and severe anemia incidence (P=0.034). Thus, enhancing access to preventive measures and improving diagnostic laboratory compliance are crucial steps for reducing infection-related complications among patients with SCD in Nyamagana.**Keywords:** Sickle cell disease, infections, chemoprophylaxis, hydroxyurea, Tanzania, malaria

365. Mgaya, A.H., Samuel, R.O., Mhando, I.E., *et al*… (2025). Avoidable severe morbidity from wound dehiscence after cesarean section: Practice and experience from a tertiary referral hospital in a low-income setting, Tanzania—a mixed-methods study. *Frontiers in Surgery*, Vol. 12. Doi: 10.3389/fsurg.2025.1524507.

Abstract

Introduction: This study aims to determine care-related risk factors and explore the perspectives of women and care providers about complete wound dehiscence after cesarean section at a tertiary referral and university hospital. **Methods:** A mixed-methods study was conducted at Muhimbili National Hospital in Dar es Salaam between April 2019 and December 2020. A case control survey compared the characteristics of interest of 131 cases of complete wound dehiscence with 393 randomly selected controls comprising cesarean deliveries between January 2015 and December 2020. In addition, six semi structured individual in-depth interviews with women, one focus group discussion with care providers, and unstructured direct observations were performed between July 2020 and December 2020. Pearson's Chi-square test and Fisher's exact test were used to determine the percentage difference of risk factors of complete wound dehiscence between cases and controls. Thereafter, a multivariate regression analysis determined the role of the independent risk factors. A thematic analysis was used to describe qualitative data. **Results:** Out of 524 women (131 cases and 393 controls), 75% of deliveries were performed by obstetric registrars and residents. Cases of complete wound dehiscence were more likely from cesarean deliveries performed by junior residents [odds ratio (OR) 1.8, 95% confidence interval (CI) 1.7–5.4]. Wound failure was characterized by complete wound dehiscence with intact sutures (70%) on loosely binding wound margins (62%) or avulsed from the fascial layers (38%). The perspectives of women and care providers were categorized into four themes: wound dehiscence as an indicator of the quality of care; effectiveness of clinical skill transfer and team work; maternal fear, stress, and socioeconomic burden; and significant external factors influencing care. **Conclusion:** Complete wound dehiscence after cesarean section was highly associated with a suboptimal surgical technique, an ineffective structure and process of clinical skill transfer, and negative experience of care from patients and their families. The identified serious and preventable gaps in the quality of cesarean section stemmed from modifiable clinical and educational practices.

366. Mghase, A., Brighton, M., Cheyo, H., *et. al*… (2025). Health System Factors Influencing Availability and Access to Comprehensive Care for Cleft Lip, Palate, and Craniofacial Anomalies in Dar es Salaam, Tanzania. *Plastic and Reconstructive Surgery–Global Open*, Vol. 13(11). Doi: 10.1097/GOX.0000000000007280.

Abstract
Background: Cleft lip and palate are common craniofacial anomalies. In low- and middle-income countries, patients with these conditions face barriers to comprehensive care. In Tanzania, despite some hospitals performing surgical procedures, the health system factors affecting access to full cleft care remain unclear. This study aimed to assess the health system factors influencing the availability and access to comprehensive care for cleft lip, palate, and associated craniofacial anomalies in Tanzania. Methods: A multicenter cross-sectional study was conducted across 37 health facilities selected based on their capacity to provide cleft care services. Facility readiness, availability of specialized personnel, infrastructure, and financing were assessed through structured questionnaires administered to health facility managers. Data were analyzed descriptively, and cross-tabulations were performed to determine predictors of cleft care availability and accessibility. Results: Among the 37 facilities surveyed, 89.7% (33 of 37) could diagnose cleft lip and palate; however, only 24% (9 of 37) provided comprehensive management. There was a severe shortage of specialized personnel required for comprehensive cleft care. Plastic surgeons were available in only 3 out of 37 (8.1%) hospitals surveyed. Speech therapists were available in only 2 facilities (5.4%), and only 1 public hospital offered speech therapy services. Limited financial resources and inadequate equipment were major barriers to providing comprehensive care. Conclusions: Although many Tanzanian health facilities can diagnose cleft lip and palate, few provide comprehensive care. Addressing these gaps requires targeted government funding, expanded local surgeon training programs, improved retention strategies, structured referral pathways, and investment in a multidisciplinary approach for cleft care services.

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367. Mhezi, V., Nkrumbih, Z., Majura, M. (2025). An Atypical Case of Thoracic Endometriosis Syndrome Mimicking Pulmonary Tuberculosis. *Case Reports in Radiology, 2025*(1). Doi:10.1155/crra/1708094.

Abstract
Background: Thoracic endometriosis syndrome (TES) is a rare form of endometriosis characterized by the presence of functioning endometrial tissue in the thoracic cavity. Patients are women of reproductive age, with a genetic link as a significant risk factor. Patients present with long-standing chest symptoms and signs that mimic pulmonary tuberculosis (PTB). The crucial issue for establishing the diagnosis is the cyclicity of signs and symptoms which occur along with the menstrual cycle. **Clinical Case:** A 34-year-old businesswoman had recurrent pelvic pain and heavy menses for 6 years, recurrent chest pain for 5 years, and recently coughing blood for 3 days. Symptoms peaked during menstruation. She reported a maternal grandmother with similar symptomatology. For the past 6 years, she was treated for recurrent pneumonia and PTB without improvement. Examination revealed right-sided pleural effusion and generalized pelvic tenderness. The catamenial nature of her symptoms led to a suspicion of TES, with PTB. Pleural fluid analysis showed exudative effusion, and Gene X-pert for MTB was negative. CA-125 was elevated, a nonspecific endometriosis marker. Pelvic ultrasound revealed features of pelvic

endometriomas. Serial chest X-ray and CT scan showed right hydropneumothorax, lung mass, lung collapse, and pulmonary fibrosis. Multiple chest tubes were placed for the recurrent hydropneumothorax management. Exploratory laparotomy with bilateral ovarian cystectomy was done, and histology revealed ovarian hemorrhagic cysts and salpingitis. Hormonal suppression initiated as mainstay of treatment. She is monitored monthly as an outpatient to assess treatment efficacy and condition progression. **Conclusion/Learning Points:** TES is a form of endometriosis involving the thoracic cavity, affecting women of reproductive age. TES may mimic PTB but symptoms correlate with the menstrual cycle (catamenial in nature). In Tanzania, diagnostic challenges persist due to its nonspecific symptoms, inadequate clinicians' awareness, and lack of treatment guideline national wide.

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368. Mhiche, A.K., Gasarasi, D., Kabona, G., *et al*… (2025). Mass drug administration coverage and its determinants for the elimination of onchocerciasis in Ulanga District, Tanzania. *PLOS Neglected Tropical Diseases*, Vol. 19(4). Doi: 10.1371/journal.pntd.0012219

Abstract

Background: Onchocerciasis remains an important public health problem targeted for elimination in Tanzania. Ulanga District was hyperendemic for onchocerciasis before the intervention, underscoring the need for particularly high coverage in MDA efforts. The district has been implementing MDA through Community Directed Treatment with Ivermectin (CDTI) strategy since 1998. However, there is preliminary evidence of persistent onchocerciasis transmission, which likely sustains the observed high prevalence of Onchocerciasis in both human and vector species. This could be linked to poor treatment coverage. This study was conducted to assess treatment coverage and explore factors that determine drug uptake during MDA program. **Methods**: A cross-sectional study was conducted in Ulanga District, Morogoro, Tanzania, from April to June 2019. Using multistage cluster sampling, 502 participants were randomly selected and interviewed through a structured questionnaire. Modified Poisson regression analysis was used to identify independent factors affecting MDA uptake. **Results**: The overall response rate was 96% with majority (67%) of respondents being females, and the mean age of the study participants was 37.8 years with a standard deviation (SD) of ± 15 years. The study found that MDA coverage varied across villages: Mawasiliano (68%, CI: 59.3 – 75.6), Uponera (83%, CI; 76.6 – 89.6), Isongo (84.8%, CI: 77.3 – 90.1) and Togo (79%, CI: 70.1 – 85.8). While Uponera and Isongo achieved the WHO-recommended 80% coverage for transmission interruption, Mawasiliano and Togo fell below this threshold. Age significantly influenced drug uptake, with younger individuals (15–24 years) having a lower uptake rate [APR = 2.8, p = 0.008], followed by the 25–34 age group [APR = 2.3, p = 0.04]. Occupation also played a role, as small and medium enterprise (SME) workers [APR = 3.2, p = 0.05] and students [APR = 2.9, p = 0.05] were less likely to participate. Residence duration in the village was a strong predictor of MDA uptake. Individuals living in the village for more than a year were significantly more likely to participate [APR = 2.3, p = 0.00]. Additionally, a lack of awareness about MDA benefits negatively impacted participation, as those

uncertain about its benefits were less likely to take the drug [APR = 2.5, p = 0.03]. Similarly, individuals unaware of the correct MDA distribution schedule had lower uptake [APR = 2.5, p = 0.03]. However, those who took Ivermectin for prevention purposes were significantly more likely to participate [APR = 13.4, p = 0.001]. **Conclusion:** coverage below the WHO optimally recommended coverage has been demonstrated in the villages studied. This implies low drug uptake, delayed interruption of transmission and Onchocerciasis elimination. The findings highlight the need for targeted interventions to improve MDA coverage by focusing on younger individuals, certain occupational groups, and new residents. Strengthening community engagement, improving health communication, and intensifying biannual MDA efforts are recommended to accelerate Onchocerciasis elimination in the district. It also underscores the need for adopting other effective public health interventions such as community mobilization towards slash and clear of potential breeding sites for Onchocerciasis vector.

369. Mhina, C., Mtogo, Y., Mafwiri, M., *et al*… *(*2025). Prevalence and associated factors for retinopathy of prematurity at a tertiary hospital in Dar es Salaam, Tanzania. *Eye*, Vol. 39(8). Doi:10.1038/s41433-025-03651-2.

Abstract

Background: Retinopathy of prematurity (ROP) is one of the leading causes of preventable childhood blindness worldwide. There has been a rapid increase in neonatal units in Tanzania leading to increased survival of preterm babies, which lead to increasing number of babies at risk of ROP. ROP screening started in Tanzania for the first time in Muhimbili National Hospital in Dar es Salaam in late 2019. This study determines the prevalence and factors associated with ROP in Muhimbili hospital from June 2020 to February 2021. **Methods:** A prospective cohort study was conducted among 193 preterm newborns with ≤34 weeks gestational age and ≤2000 g birth weight. ROP screening was performed using an indirect ophthalmoscope and 20D Volk lens on dilated fundus. Prevalence was determined as the proportion of babies with ROP. Cox regression model was used to assess the contribution of risk factors to the occurrence of ROP.**Results:** The prevalence of ROP was 29% (56/193), and of type 1 ROP was 8.8%. Majority had zone two (73.2%) and 41.1% had stage two disease. Aggressive ROP constituted 8.9%. Significant factors for ROP development were gestational age <32 weeks (hazard ratio 6.8, *p* value 0.00), birth weight <1500 g (hazard ratio 2.1, *p* value 0.02), Apgar score <7 (hazard ratio 1.9, *p* value 0.03), RDS (hazard ratio 3.3, *p* value 0.01) and oxygen supplementation for >1 week (hazard ratio 0.74, *p* value 0.03). Surfactant use had a protective effect (hazard ratio 0.2, *p* value 0.03). **Conclusion:** Prevalence of ROP is fairly high in our setting. Screening is essential to prevent visual morbidity and blindness resulting from ROP in the country.

370. Mhina, C., Nyamsaya, S., Swai, N., et al... (2025). Ulcerated Pilomatrixoma: A Frequently Misdiagnosed Tumour. *Tanzania Medical Journal*, Vol. 36(3). Doi:10.4314/e66vja86.

Abstract

Pilomatrixoma is a rare superficial benign skin tumor arising from the hair follicle matrix cells. Pilomatrixoma can occasionally become malignant. Complete surgical excision is often curative. It is often clinically misdiagnosed, hence the reason to share this case. We report a case of a 19-year-old man who presented with an ulcerated non-painful swelling involving the medial part of the right upper eyelid for two years. It was initially clinically diagnosed as keratoacanthoma and later basal cell carcinoma. However, histopathological examination after complete surgical excision revealed features of pilomatrixoma. This report highlights that pilomatrixoma may be misdiagnosed in clinical practice. ***Keywords:*** *Pilomatrixoma, Eyelid, Epithelioma, Pilomatrix carcinoma.*

371. Michael, N.A., Mselle, L.T., Bureta, C.A., *et al*… (2025). Barriers and facilitators to accessing stroke care services in Tanzania: an explorative qualitative study among stroke survivors, caregivers and healthcare providers. *BMC Health Services Research*, Vol. 25(1). Doi:10.1186/s12913-025-13026-8.

Abstract

Background: Stroke is a leading cause of death and disability globally, posing a significant burden in low- and middle-income countries where universal access to healthcare services is limited. To improve access to stroke care services, the government of Tanzania has initiated public health campaigns to raise stroke awareness and established acute stroke units in tertiary hospitals. Nevertheless, lack of universal health coverage remains a significant obstacle to delivering high-quality healthcare services. Therefore, to enhance understanding of the factors influencing access to healthcare services amid the growing stroke burden, this study aims to explore barriers and facilitators to accessing stroke care services across the continuum of care in Tanzania. **Methods:** The study adopted a descriptive phenomenology design and included 45 purposively recruited healthcare providers, stroke survivors and care givers at Muhimbili National Hospital-Mloganzila (MNH-Mloganzila) in Tanzania. In-depth interviews (IDIs) were conducted from June to September, 2024. Inductive thematic analysis was performed using Dedoose software. The study was approved by the Institutional Review Board of Muhimbili University of Health and Allied Sciences (Ref. No. MUHAS-REC-04-2024-2139). **Results:** Thematic analysis revealed four barriers and three facilitators to accessing stroke care services across the continuum of care. The barriers to accessing stroke care services included low health literacy among stroke survivors and caregivers; high costs related to stroke care services, medical insurances and transport; inadequacy of essential healthcare resources at the lower-level healthcare facilities; and limitations in care processes at the national stroke center. The facilitators to accessing stroke care services included presence of strong social support systems; improved stroke service delivery at the national hospital; and increased funding allocation for healthcare training and service delivery. **Conclusions:** To ensure equitable access to stroke care services across the continuum of care in Tanzania, the barriers identified must be addressed. The study underscores the importance of raising public awareness on stroke symptoms, and increasing availability of thrombolytic therapy, ambulance services, stroke diagnostics, physiotherapy centers, and stroke experts especially in regional referral hospitals in Tanzania.

372. Michael, N.A., Mselle, L.T., Bureta, C.A., *et al*… (2025). Post-stroke recovery and home care challenges among stroke survivors and family caregivers in Tanzania: a qualitative study. *BMC Nurs,* Vol. 24(1345). Doi.10.1186/s12912-025-03929-6.

Abstract

Background: Globally, stroke remains one of the leading causes of long-term disability and death, with disproportionate burden in low and middle-income countries (LMICs). Stroke survivors in LMICs face several challenges and unmet care needs after hospital discharge due to limited healthcare infrastructure. Additionally, stroke survivors are discharged while unable to perform activities of daily living, leading to dependence on informal caregivers who are not trained in managing care at home. In Tanzania, where structured post-stroke support systems are limited, understanding stroke recovery journey and home care experiences is critical to inform more responsive stroke transitional care models. Therefore, the aim of this study was to explore the post-stroke recovery and home care challenges faced by survivors and their caregivers in Tanzania. **Methods:** This qualitative study was conducted at a neurology clinic of a tertiary referral hospital in Dar es Salaam, Tanzania. Using a descriptive phenomenological approach, in-depth interviews were conducted with a purposive sample of unmatched 16 pairs of stroke survivors and caregivers. Data were analyzed thematically in Dedoose software using an inductive approach to capture patterns and meanings across participant narratives. The study was approved by the Institutional Review Board of Muhimbili University of Health and Allied Sciences (Ref. No. MUHAS-REC-04-2024-2139). **Results:** Three major themes emerged: (1) post-stroke limitations and adjustments; (2) caregiving burden and coping strategies; and (3) home care challenges after stroke. Stroke survivors faced multiple post-stroke limitations which restricted their independence and slowed recovery. Caregivers, in turn, experienced considerable physical, emotional and financial burdens which were compounded by insufficient caregiving training. Home care was further complicated by minimal family support, poor home environment, financial constraints and adverse events. Despite these challenges, both survivors and caregivers demonstrated resilience by adopting coping strategies to navigate the demands of post-stroke recovery and home care needs. **Conclusion:** Although stroke survivors and their caregivers demonstrated remarkable resilience in the recovery journey, they continue to encounter complex home care challenges such as inadequate caregivers' competence, poor home care environment, financial hardships and uncoordinated follow-up care which lead to adverse events. Bridging these gaps calls for comprehensive discharge planning, structured home-based follow-up, caregiver training and supportive national policies that ensure continuity of care.

373. Mikomangwa, W.P., Metta, E., Moen, K., *et al*... (2025). "I Stopped to Prove them Wrong:" Reasons for Discontinuing Daily Oral HIV Pre-exposure Prophylaxis Among Women at High Risk of HIV in Tanzania.A Convergent Mixed Methods Study. *AIDS and Behavior*, Vol. 1(3). Doi: 10.1007/s10461-025-04879-5.

Abstract

High discontinuation of pre-exposure prophylaxis (PrEP) among high-risk women undermines its effectiveness. However, there is limited evidence on the reasons for PrEP discontinuation among female sex workers in sub-Saharan Africa. Exploring population-specific reasons for PrEP discontinuation will guide the design of client-centered strategies. Thus, we explored the reasons for PrEP discontinuation among female sex workers in Tanzania using mixed methods from 2022 to 2023 in Tanga, Tanzania. Participants were recruited through respondent-driven sampling and followed up for 12 months, and quantitatively interviewed at months 1, 6, and 12. In-depth interviews were carried out alongside the 12-month survey with purposely sampled female sex workers who had discontinued PrEP. Separate descriptive (and log-binomial regression) and thematic analyses were performed, and the insights were compared and integrated. We enrolled 313 participants with a median age of 27 years (IQR: 23–32). At 6 months, 61.5% (95% CI 54.3–68.4) had stopped taking PrEP for ≥ 3months, increasing to 67.4% (95% CI 60.2–74.0) at 12 months. Self-perceiving to be at "medium" to "high" risk of HIV had a 20% lower risk of stopping PrEP for ≥ 3months compared to self-perceiving to be at low or no risk (aRR 0.8, 95% CI 0.783–0.896). Participants discontinued PrEP because of medical and pharmacological challenges; perceived negative social norms and societal pressures; perceived undesirable pill characteristics and dosing schedules; low self-assessed HIV risk; perceived low benefit of PrEP; and low self-efficacy in adhering to PrEP. Our findings highlight the need for a multi-component intervention to promote PrEP retention.

374. Minja, I.K., Nkya, S., Bukini, D., *et al*… (2025). Strengthening global partnerships for sustainable sickle cell disease care: insights from SickleInAfrica at the 77th United Nations General Assembly and the US-Africa Leaders' Summit. *BMJ Global Health*, Vol. 10(3). Doi:10.1136/bmjgh-2024-017154.

Abstract

Background: Addressing sickle cell disease (SCD) is crucial for achieving health-related Sustainable Development Goals, particularly in Africa. The region is significantly affected, with 78.7% of patients with SCD residing in sub-Saharan Africa and over 515 000 newborns diagnosed annually. Historically, African health systems have struggled to provide optimal care for patients with SCD, resulting in high under-5 mortality and severe childhood morbidity. Scientific

innovations and stakeholder engagement offer hope for improving SCD outcomes. **Objective:** To explore the role of high-level partnerships and scientific innovation in advancing SCD care and research in Africa, focusing on the contributions and strategic engagements of the SickleInAfrica, as highlighted at the 77th United Nations General Assembly (UNGA) and the US-Africa Leaders' Summit. **Approach:** SickleInAfrica, comprising eight countries, leverages a robust infrastructure for SCD research and care. The consortium has established a comprehensive SCD database and a patient registry in each of the consortium sites that includes demographic details, clinical diagnosis, management details and follow-ups/visits. Currently, over 34 000 patients with SCD are enrolled, making it the largest globally. It has also contextually adapted clinical guidelines for managing SCD for all levels of care. The high-level engagements at the 77th UNGA held in September 2022 in New York and the US-Africa Leaders' Summit held in December 2022 in Washington DC promoted SCD awareness and partnerships. The UNGA session emphasised biomedical science, implementation research and partnerships in therapeutic development, while the US-Africa Leaders' Summit session focused on Global Partnerships for SCD: Advancing Science and Technology for Health in Africa. **Conclusions**: High-level engagements facilitate cross-border dialogues, underscoring the importance of partnerships from grassroots to global alliances. Key outcomes include increased awareness, policy advocacy and the establishment of SCD Centres of Excellence and genomics capacity-building initiatives. Sustainable efforts require robust partnerships, government involvement, community awareness and equitable access to advanced therapies.

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375. Minja, L.T., Minja, L.M., Mlalama, K, *et al*... (2025). Facilitators, barriers, and strategies for the implementation of peer-led tuberculosis active case finding among people who use drugs in Dar es Salaam, Tanzania. *Plos one*, Vol. *20*(5). Doi: 10.1371/journal.pone.0310069.

Abstract

Background: Globally, tuberculosis (TB) is the leading cause of death from a single infectious agent. In 2023, an estimated 2.7 million cases of TB were undiagnosed or unreported. To address missing cases, the World Health Organization recommends systematic screening for TB. This is synonymous to active case finding (ACF) and involves provider-initiated screening and testing for TB. Despite the high incidence and prevalence of TB among people who use drugs (PWUD), there is a significant gap in data, on their perspectives, regarding the implementation of TB ACF services. This study aimed to explore facilitators and barriers to implementing peer-led TB ACF, as perceived by both, current and potential service users. **Methods:** We conducted in-depth interviews among purposively selected adult PWUD in Dar-es-Salaam region, Tanzania. Study participants included: (1) peer PWUD with prior history of illicit drug use and medication-assisted treatment (MAT) (n = 10), (2) current medication-assisted treatment service users receiving clinic-based daily methadone (n = 8), and (3) community PWUD not on MAT recruited from various community locations (n = 4). All peer PWUD were experienced in TB ACF. Thematic content analysis was utilized with the support of NVivo12. **Results:** Our findings are presented into two categories: individual and structural, with three main themes pertaining to peer-led TB ACF: (1) facilitators (2) facilitators for targeted improvement and optimization and (3) barriers. A critical

facilitator was the acceptability of peer PWUD in providing TB ACF services. Key facilitators for targeted improvement and optimization included the TB screening tool, mobile TB diagnostic services, integrated methadone/TB services, and monetary incentives to peer PWUD. Barriers included inadequate adherence to infection prevention and control (IPC) measures when providing TB ACF services resulting in a reluctance to wear face masks due to stigma, misconceptions that prior TB preventive therapy among peers negates their need for continued IPC adherence, high mobility of PWUD and the fear of withdrawal symptoms associated with the use of anti-TB medication. Due to this fear, many PWUD preferred not to take anti-TB, as they were concerned about the potential severity of withdrawal symptoms. **Conclusion:** Our findings highlight the crucial role of peer-led approaches in enhancing TB ACF among PWUD. Peer acceptance as service providers highlights the potential of community-driven interventions. Strengthening facilitators and addressing challenges is key to optimizing these services. Future research should explore the feasibility of providing peer-supported TB diagnosis and treatment services at friendly drop-in centers. **Recommendations:**1. Strengthen mobile diagnostic services by increasing their frequency and coverage, enabling timely diagnosis and treatment. 2. Enhance the TB symptom screening tool by including a symptom-independent test, such as a chest X-ray, as the symptoms of illicit drug use can mask and mimic TB symptoms making diagnosis challenging. 3. Address stigma and misconceptions through peer-led education and awareness campaigns that utilize audio-visual materials tailored to PWUD. This will promote adherence to IPC measures and create a more supportive environment for TB ACF activities. 4. Use anti-TB with minimal interactions with opiates or shorter TB treatment regimens to prevent withdrawal symptoms and improve adherence.

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376. Misinzo, S.W., Manguzu, M.A., Mallya, B., *et. al*… (2025). Postoperative Arrhythmias After Open-Heart Surgery: Incidence, Risk Factors, and Management in Tanzania. *medRxiv*, vol. 12. Doi:10.64898/2025.12.01.25341400.

Abstract

Background: Arrhythmias following open heart surgery are a known complication, affecting 10-57% of patients with heart disease. Despite the well-established link between cardiac surgery and risk of developing postoperative arrhythmias, there remains a paucity of data in this context to guide targeted interventions and improved patient outcomes. This study aimed to assess the incidence, factors associated with arrhythmias, therapeutic management and treatment outcomes among post-cardiac surgery patients in Tanzania. **Methods:** A prospective single-arm cohort study involving 100 post-cardiac surgery patients was conducted from March to June 2024 at Jakaya Kikwete Cardiac Institute (JKCI) in Dar es Salaam, Tanzania. A case report form (CRF) comprising three sections: (1) demographic and preoperative characteristics, (2) intraoperative and clinical details, and (3) postoperative information on arrhythmias was used to collect data. Post-cardiac surgery arrhythmias were diagnosed using electrocardiographic monitoring and 12-lead electrocardiograms (ECG). Analysis was conducted using SPSS version 23, with a p-value of < 0.05, considered statistically significant for associations between variables. **Results:** Among 100 post–cardiac surgery patients, 52% had a prior history of arrhythmia and 96% had rheumatic heart disease. Postoperatively, 54% developed arrhythmias, predominantly sinus tachycardia (66.7%)

and atrial fibrillation (59.2%). Factors significantly associated with postoperative arrhythmias included higher body mass index (BMI), preoperative arrhythmia, and hemodynamic instability. Management primarily involved cardiac membrane stabilizers, intravenous fluids, beta-blockers, and anticoagulants. **Conclusion:** This study found that postoperative arrhythmias were common after open-heart surgery, predominantly sinus tachycardia and atrial fibrillation. Higher BMI, preoperative arrhythmia, and hemodynamic instability were key risk factors, underscoring the need for close monitoring of high-risk patients.

377. Mitawa, S.N., Mrema, E.J., Shebe, K.A., *et al*… (2025). Contact Dermatitis Among Hospital Cleaners in Dar es Salaam: Prevalence and Associated Factors. *Malawi Medical Journal*, Vol. 37(4). Doi:10.4314/mmj. v37i4.4.

Abstract

Background: Cleaners are a high-risk group for contact dermatitis in healthcare settings due to frequent exposure to cleaning agents, gloves, and wet work, yet they remain understudied in Tanzania. This study investigated the prevalence of contact dermatitis and its associated factors among hospital cleaners in Dar es Salaam, Tanzania. **Methods:** A cross-sectional study was conducted between March and July 2022 among hospital cleaners from three regional referral hospitals and one national hospital. Data were collected using the Standardised Nordic Occupational Questionnaire. Modified Poisson regression was applied to estimate prevalence ratios (PRs) with 95% confidence intervals (CIs). Contact dermatitis was defined as the presence of two or more skin symptoms affecting the hands, wrists, or forearms within the past 12 months. **Results:** A total of 323 cleaners took part in the study. The median age was 26 years (range 18-64), and 65% were female. The prevalence of contact dermatitis was 48.9%. The most frequently reported symptoms were itching (48.6%), dry skin (44.6%), and rashes (22.0%). Work-related factors positively associated with contact dermatitis included use of floor-cleaning products (aPR = 1.70, 95% CI: 1.18–2.44), bleach (aPR = 1.64, 95% CI: 1.22–2.22), handwashing >10 times a day (aPR = 1.63, 95% CI: 1.12–2.35), and latex glove use (aPR = 1.61, 95% CI: 1.29–2.01). Prevalence varied across hospitals. Individual factors such as age, sex, smoking, and allergy history were not significantly associated with disease. **Conclusions:** Contact dermatitis is highly prevalent among hospital cleaners in Dar es Salaam, with its occurrence mainly associated with occupational exposures rather than individual susceptibility. Preventive measures should prioritize safer cleaning products, improved hand hygiene practices, appropriate glove use, and tailored skin protection programs.

378. Mkande, A.S., Mosha, I.H. (2025). A Qualitative Exploration of Perceptions and Experiences of Adolescent Girls and Young Women on Modern Contraceptive Methods Use in Malinyi District, Morogoro, Tanzania. *The East African Health Research Journal*, Vol. 8(3). Doi:10.24248/eahrj. v8i3.806.

Abstract

Background: Despite the existence of plans and strategies for providing family planning methods in Tanzania, the uptake rate of modern contraceptives among Adolescent Girls and Young Women

(AGYW) in Tanzania remains low. The fertility rate is 112 per 1000; only 15.2% of adolescents are using Modern Contraceptives Methods (MCMs) in Tanzania. Modern contraceptive use is one of the important interventions to reduce the burden of adolescent pregnancy which is as high as 22% in the country. However, little is known regarding AGYW's perceptions and experiences with MCMs. **Objective**: To explore the perceptions and experiences of AGYW with MCMs use in the Malinyi district of Morogoro, Tanzania. **Materials and Methods:** This was a qualitative phenomenology study. Purposive sampling was used to select 19 study participants. An in-depth interview guide was used to collect data. Data were transcribed verbatim. A thematic data analysis approach was used to analyze data. **Results**: Two major themes that emerged from the findings were experiences and perceptions of AGYW on MCM use. On the experiences of MCMs, the study findings revealed that AGYW have limited knowledge and awareness about modern contraceptive methods; some of them acknowledged the benefits of modern contraceptive methods in preventing unintended pregnancies, providing a sense of empowerment, and enabling them to pursue their life goals. On perceptions of MCM use some of the study participants shared challenges encountered, including side effects, social influence, cultural and religious beliefs, myths and misconceptions that contribute to the perceptions and use of MCMs. **Conclusion and recommendation:** Healthcare providers at the health facilities should continue educating AGYW on the importance of using MCMs.

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379. Mkoka, D.A., Ross, M.W., Mkonyi, E., *et al*… (2025). Evaluation of an Afrocentric Sexual Health Education Curriculum for Medical, Nursing and Midwifery Students in Tanzania. *East African Journal of Health and Science*, Vol. 8(1). Doi:10.37284/eajhs.8.1.3032.

Abstract

Background: Africa has the world's highest rates of sexual health concerns, yet training programs to teach clinicians how to address sexual health concerns are rare. To address this gap, we developed a comprehensive sexual health curriculum tailored to Tanzania's most common sexual health concerns. We use the curriculum to train sexual health education (SHE) to Tanzanian medical, nursing, and midwifery students**. Aim:** To evaluate training in sexual health in terms of structure, content, delivery, and cultural acceptability for medical, nursing, and midwifery professionals. Methods: First, we conducted a two-year formative research phase involving 18 Focused Group Discussions (FGD) with healthcare providers and students and 12 In-depth Interviews (IDIs) with sexual health stakeholders. The FGDs were stratified by discipline and working experience in years. The formative research phase was used to inform curriculum content and to tailor the SHE curriculum to the Tanzanian clinical context. Next, we developed a comprehensive sexual health curriculum tailored to Tanzania's most common sexual health concerns. Given the lack of sex education that most students reported, we dedicated a day to normal sexual development and one to understanding the common sexual concerns of patients in Tanzania. We also had a strong emphasis on skills development by devoting one day for participants to practice skills. In addition, we ensured content to address cultural myths and taboos surrounding sexual health. We then trained a total of 206 students: the training was conducted in 2021. Immediately following the training evaluation was conducted as an online survey and

qualitative responses were saved automatically in the Qualtrics database upon participants' completion. **Results:** Most participants (76.6%), evaluated the curriculum as culturally appropriate for Africa, personally valuable (96.1%) and would recommend it to a fellow student (98.5%). Furthermore, the curriculum was perceived as feasible, personally and culturally acceptable with endorsement of the training techniques employed, and suggestions on how to further improve the curriculum. **Conclusion:** Training the SHE curriculum is crucial to impact the core competencies of health professionals for addressing the sexual health concerns of their future clients. This study provides evidence that a sexual health curriculum tailored to the African context is highly needed, acceptable, and feasible.

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380. Mkonyi, L.E., Mmary, L. A. (2025). Xerostomia and associated factors among adults with HIV on HAART attending voluntary counselling and testing (VCT) clinics in Dar es Salaam. *BMC Oral Health,* Vol. 25(655). Doi:10.1186/s12903-025-05993-5.

Abstract

Background: Adequate saliva quantity and quality are necessary for proper oral function and protection. Xerostomia, or dry mouth, is a common complaint among people living with HIV (PLHIV) which increases their risk of acquiring oral diseases. This study aimed to assess the magnitude of xerostomia and the associated factors in this group of patients. **Methods:** A descriptive cross-sectional hospital-based study was conducted among 420 PLHIV on highly active antiretroviral therapy (HAART) aged 18 years and above. Informed consent was obtained from the participants during data collection. The xerostomia was assessed using a questionnaire. Pearson's $\chi 2$ test was used to correlate independent (sociodemographic factors, oral health-related, and HIV-related factors) and dependent variables (xerostomia). Univariate and adjusted multinomial logistic regression were used to determine the odds ratio (OR) of xerostomia. **Results**: Xerostomia was observed in 36.3% of the respondents. The chi-square test showed a significantly higher proportion of xerostomia among the unemployed ($p = 0.014$), those who were HIV diagnosed up to five years ($p = 0.014$), and those having CD4+ counts ≥ 500 cells/ mm^3 ($p = 0.03$). In multivariate analysis, higher odds of having xerostomia were found among participants with higher viral load (OR = 2.6; CI = 1.07–6.3), whereas lower odds were found among self-employed participants (OR = 0.48; CI = 0.28–0.82) and employed participants (OR = 0.52; CI = 0.27–0.98). **Conclusion:** The prevalence of xerostomia is moderately high among PLHIV. Higher viral load and unemployment were associated factors with xerostomia. Low CD4+ counts, duration of HAART use, and HAART regimen were not associated with xerostomia

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381. Mkumbwa, R.D., Pancras, G., Sirili, N.S., (2025). Going paperless: the strengths and limitations of an electronic research ethics information management system in a health training institution in Tanzania. *BMC Health Services Research,* Vol. 25(12). Doi:10.1186/s12913-024-12151-0.

Abstract

Background: Over the years, the processing of research proposals for ethical approvals has been done manually through a review of hard copies. Longer turnaround time, increased financial costs

to researchers, and cumbersome submission processes are a few of the challenges inherent to paper-based review of research proposals. This has necessitated the shift to electronic management of research proposals, Research Ethics Information Management Systems (REIMS). Still, the advantages of going paperless and inherent drawbacks remain unsubstantiated, hence the aim of this study. **Methods:** We adopted a pre- and post-evaluation design using a qualitative approach, where 16 faculty members of the Muhimbili University of Health and Allied Sciences were interviewed. Participants were purposefully recruited to include only those who had been exposed to both the paper-based research ethics review system and REIMS. The faculty were stratified into two groups: researchers and research ethics committee members. Thematic analysis using inductive approach was used to develop and analyze gathered information. **Results:** The study unveiled the strengths and limitations of REIMS as two important themes. The strengths included convenience in the use of the system and improved records management. The limitations included demand for reliable ICT resources and limited reviewer-researcher interaction. **Conclusion:** The findings of this study underscore the strengths and limitations of going paperless and employment of REIMS. Institutions aspiring to adapt the system can learn from this experience and devise ways to overcome the limitations. We recommend system automation, strengthening the institutional capacity and further studies to be conducted on the adoptability of REIMS especially in resource limited settings.

Keywords: *Research information management system Research ethics Tanzania.*

382. Mlatie, I., Ndola, I., Chibwae, A., *et al*... (2025). Dartos flap rotation for severe congenital penile torsion in a nine-year-old: a case report and surgical insights. *Journal of Surgical Case Reports*, 2025(3). Doi.10.1093/jscr/rjaf164.

Abstract

Background: Congenital penile torsion, a rare anomaly characterized by the rotation of the penile shaft along its longitudinal axis, often goes unrecognized in low- and middle-income countries. This case highlights the management of a nine-year-old male presenting with isolated severe penile torsion using a Dartos flap rotation technique. The surgical approach was successful, with no postoperative complications, underscoring its utility as a simple and effective method, particularly in resource-limited settings.

383. Mlawa, M., Paulo, D. G., Kisenge, P., *et al*… (2025). Burden of cognitive impairment and its associated factors among patients with rheumatic heart disease at a tertiary cardiac center in Tanzania: A hospital-based cross-sectional study. *Heart Rhythm O2*, Vol. 6(11). Doi; 10.1016/j.hroo.2025.08.032.

Abstract

Background: Globally, rheumatic heart disease (RHD) affects 30–70 million people, with 90% in developing nations. In Tanzania, the RHD burden is 1%–3%. Patients with RHD show neuropsychiatric manifestations such as cognitive impairment (CI), which affects quality of life, but research in Tanzania is lacking. This study aimed to fill this gap. **Objective:** This study aimed to determine the burden of CI and its associated factors among patients with RHD at the Jakaya

Kikwete Cardiac Institute (JKCI), Dar es Salaam, Tanzania**. Methods:** We conducted a hospital-based cross-sectional study at JKCI from November 2023 to February 2024. A sample of 216 patients with RHD 14 years or older provided informed consent or assent. Excluding those with preexisting mental illness, recruitment used consecutive sampling. A questionnaire collected sociodemographic and clinical data. The General Practitioner Assessment of Cognition tool assessed cognitive impairment. Data analysis used STATA version 15.1 (StataCorp LLC, College Station, TX). Ethical approval was obtained from the Muhimbili University of Health and Allied Sciences and the JKCI Research and Ethics Committee. **Results:** A total of 216 patients diagnosed with RHD were studied. The median age (interquartile range) was 27 (16.0–45.5) years, with a female predominance (51.4%, n = 111). More than half had attained a secondary level of education (56.9%, n = 123) and were insured (58.8%, n = 127), while less than half were employed (40.7%, n = 88). Regarding substance use, less than a quarter were cigarette smokers (5.6%, n = 12) and over a quarter were alcohol drinkers (28.2%, n = 61). The prevalence of cognitive impairment was 20.4% (n = 44). Old age (adjusted prevalence ratio [aPR] 1.04; 95% confidence interval 1.02–1.05; P < .0001), positive human immunodeficiency virus status (aPR 5.00; 95% confidence interval 1.85–13.53; P = .02), undernutrition (aPR 2.44; 95% confidence interval 1.39–4.29; P < .002), history of atrial fibrillation (aPR 3.16; 95% confidence interval 1.08–9.30; P = .036), and history of stroke (aPR 2.58; 95% confidence interval 1.43–4.68; P = .002) were independently associated with cognitive impairment. **Conclusion:** Screening of all patients with RHD for cognitive impairment is recommended, particularly those with atrial fibrillation, human immunodeficiency virus, advanced age, undernutrition, and a history of stroke**.**

Keywords; *Cognitive impairment, Rheumatic heart disease, Atrial fibrillation, stroke.*

384. Mnkugwe, R.H. (2025). Praziquantel plasma concentration and its metabolic ratio suboptimally predict schistosomiasis cure among infected children. *Bulletin of the National Research Centre*, Vol. 49(1). Doi:10.1186/s42269-025-01305-7.

Abstract

Background: In recent years, biomarkers or surrogate endpoints have been vital in predicting treatment response. In schistosomiasis treatment using praziquantel, it has been suggested that drug level quantified at 4 hours post drug intake is an optimal sampling time for monitoring of its systemic exposure. However, no studies have established whether it is the parent drug plasma concentration or its major metabolic ratio that better predicts treatment outcome. In addition, the cutoff threshold values for these biomarkers in predicting cure have not been studied. **Results:** A total of 287 participants were enrolled and followed up for 21 days. The median age of the study population was 12 years (range 7–16 years). The cutoff point for praziquantel concentration in predicting schistosomiasis cure was ≥ 222 ng/dL (Youden's index = 0.341, AUC = 0.688), while for the metabolic ratio was ≥ 0.038 ng/dL (Youden's index = 0.276, AUC = 0.661). Praziquantel plasma concentration had a sensitivity of 63% (95% CI 56.5–69.2%), specificity of 71.2% (95% CI 56.9–82.9%), and diagnostic accuracy of 64.5% (95% CI 58.6–70.0%). While the positive and negative predictive values (PPV and NPV) were 90.8% (95% CI 83.5–94.8%) and 29.8% (95% CI 22.0–38.7%), respectively. The AUC for praziquantel plasma concentration was found to be

68.8% (95% CI 61.0–76.6%) ($p < 0.001$). Metabolic ratio had a sensitivity of 46.8% (95% CI 40.3–53.4%), specificity of 80.8% (95% CI 67.5–90.4%), and diagnostic accuracy of 53% (95% CI 47.0–58.9%). While the PPV and NPV were 91.7% (95% CI 85.2–95.9%) and 25.2% (95% CI 18.8–32.4%), respectively. The AUC for metabolic ratio was found to be 66.1% (95% CI 58.4–73.8%) ($p = 0.0003$). There was no statistically significant difference in the discriminatory power of praziquantel plasma concentration (AUC = 68.8%) and metabolic ratio (AUC = 66.1%) in predicting schistosomiasis cure ($p = 0.25$). **Conclusion:** Despite praziquantel plasma concentration having significantly higher sensitivity and negative predictive value than the metabolic ratio, both biomarkers suboptimally predicted schistosomiasis cure at 21 days follow-up.

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385. Mnkugwe, R.H., Sasi, P., Kinung'hi, S. (2025). Therapeutic efficacy and safety of praziquantel for intestinal schistosomiasis treatment among patients receiving rifampicin-based anti-TB drugs in the Lake Victoria zone, Tanzania. *Bulletin of the National Research Centre*, Vol. 49(1). Doi:10.1186/s42269-025-01357-9.

Abstract

Background: Coinfection with schistosomiasis and tuberculosis (TB) remains common in endemic settings across Sub-Saharan Africa. Despite this coendemicity, studies evaluating the therapeutic efficacy and safety of praziquantel in patients receiving rifampicin-based anti-TB drugs are lacking. We investigated the efficacy and safety of a single 40 mg/kg dose of praziquantel in schistosomiasis–TB coinfected patients undergoing rifampicin-based anti-TB therapy. **Methods:** A prospective efficacy and safety study was conducted among 159 patients with schistosomiasis-TB coinfection treated with single 40 mg/kg dose praziquantel. A pre-tested questionnaire was used to gather both sociodemographic and clinical data. A single stool sample was collected, and duplicate Kato Katz smears prepared for detection of Schistosoma mansoni both at baseline and follow-up. Efficacy of the drug was assessed by both parasitological cure and egg reduction rates (ERR) at 3-week' post-treatment. Adverse events were assessed within 4 h of drug administration. **Results:** Out of 540 screened TB patients, a total of 159 adult patients with schistosomiasis-TB coinfection were enrolled. Median age was 40 years (Interquartile range (IQR): 35- 46). Out of 151 infected patients who were assessed at follow-up, 74 (49.0%, 95% confidence interval (CI): 40.4, 57.0) were cured (no eggs detected in stool samples at follow-up). The parasitological cure rate was lowest among those with moderate infection intensity 13.0% (three out of 23). The egg reduction rate (ERR) was found to be 76.4%. On multivariable regression analysis, high baseline infection intensity (adjusted prevalence ratio (aPR) = 1.93 95% CI 1.42–2.62; $p < 0.001$) and being overweight (aPR = 1.77 95% CI 1.09–2.85; $p = 0.02$) were significant factors associated with cure rate at 3-week' post-treatment. Of the 155 treated patients who received the drug, 48 (31.0%, 95% CI 23.9–38.1) were observed to present with at least one adverse event, with abdominal pain being the most common (29.7%, 46 out of 155). On multivariable analysis, high baseline infection intensity (aPR = 2.19 95% CI 1.34–3.56; $p = 0.002$) and changed stool consistency (soft stool aPR = 2.22 95% CI 1.22–4.03; $p = 0.009$, loose stool aPR = 2.29 95% CI 1.19–4.41; $p = 0.01$) were significant factors associated with occurrence of adverse events post-treatment. **Conclusions:** This study observed very low parasitological cure and egg reduction rates following single dose of praziquantel treatment in the presence of

Rifampicin-based anti-TB regimen. The observed low efficacy may be attributed to the drug-drug interaction. Since the study lacked drug plasma concentration data and comparison group, it only reflects the drug's effect as observed. Future research with a pharmacokinetic study component and a comparison group is needed to gain more evidence on the observed efficacy.

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386. Mnyigumba, R., Mohamed, H., Mwanga, S., *et al*… (2025). Community and health workers' perspective on impacts of climate change on reproductive, maternal, and child health outcomes in Kilwa district council, Tanzania: a qualitative study. *BMC Public Health*, Vol. 25(1). Doi. 10.1186/s12889-025-21277-7.

Abstract

Background: Climate change continues to manifest at an unprecedented rate and is increasingly recognized as a serious threat to reproductive, maternal, and child health. This qualitative study aims to explore community and healthcare workers' perspectives on the impacts of climate change and related extreme weather events on reproductive, maternal, and child health outcomes in Kilwa District, Tanzania. **Methods:** In October 2024, a cross-sectional qualitative study design was employed, where 10 focus group discussions with women and 15 key informant interviews with healthcare workers in 10 flood-prone villages in Kilwa District were conducted. All discussions and interviews were audio-recorded, transcribed verbatim, and analyzed using NVivo-12, both inductively and deductively. **Results:** Most respondents perceive climate change as a shift in weather patterns over time, as evidenced by rising temperatures, unpredictable rainfall, and an increasing frequency of floods and tropical cyclones. High temperature, floods, and prolonged dry spells were perceived by community and healthcare workers to have direct and indirect impacts on reproductive, maternal, and child health outcomes. Study participants perceived a clear linkage between observed weather changes and negative maternal and child health outcomes, including limited accessibility to health facilities during the flooding season, a surge in climate-sensitive diseases such as malaria and diarrhoea in the aftermath of floods, and increased food insecurity leading to malnutrition. The increased frequency of climate-related disasters has driven changes in fertility intentions, as women have expressed a desire to have smaller families, fearing that climate-related extreme weather events would further strain their financial capacity to support larger families. Participants described that women faced heightened vulnerabilities due to patriarchal gender norms. Travelling long distances searching for water, increased burden of household chores, and climate-induced economic instability were reported to put women and girls at increased risk of experiencing sexual and gender-based violence. In response to these impacts, the community has implemented several adaptation measures, such as utilizing maternity waiting homes during the flooding season, provision of psychosocial support for disaster victims, and relocation of vulnerable populations from flood-prone areas. **Conclusion:** Community and healthcare workers' perspectives from this study highlight that the ongoing climate crisis is taking a heavy toll on reproductive, maternal, and children's health in Kilwa district. The findings underscore the critical urgency for strengthening the climate resilience of the healthcare system to ensure the continuity of healthcare service provision during and after climate-related disasters.

Additionally, policy solutions are proposed to take into account the differential vulnerability and impacts of climate change, thereby ensuring climate action is gender-responsive.

387. Mohamed, H., Moon, H.J. (2025). Evaluation of Water Supply, Sanitation and Hygiene Intervention in Schools, Health Care Facilities and Communities for the Prevention of Diarrhea Diseases in Lindi Region, Tanzania. *eajahme*, Vol. 8(1). Doi: 10.58498/eajahme.v8i1.102.

Abstract

Introduction: Water, sanitation, and hygiene (WASH) are vital for preventing diarrhoea. A 2019 baseline study in Mtama District Council and Lindi Municipal Council reported a 13% prevalence of diarrhoea among children under five. Only 3 of 12 primary schools had a reliable water supply, while none of the six health facilities did. School children and caregivers had low hygiene knowledge and practices. A three-year project was implemented to improve WASH services and raise hygiene knowledge and practices to reduce diarrhoea among children under five. This evaluation assessed improvements in WASH conditions in targeted schools, health facilities and communities, examined changes in diarrhea prevalence, and explored the sustainability of implemented interventions. **Methods:** The evaluation employed both quantitative and qualitative methods. Interviews with government officials, community members, and school children were conducted. An observation checklist was used to assess constructed or renovated water supply, sanitation, and hygiene infrastructure in schools and health facilities. The Organization for Economic Co-operation and Development (OECD/DAC) criteria were used to evaluate relevance, effectiveness, efficiency, coherence, sustainability, and coordination. **Results:** The prevalence of diarrhea among children under five years of age decreased from 13% to 9.6%. Water supply infrastructure in all project schools and healthcare facilities was either renovated or newly constructed. Nearly all school children (99%) received training in handwashing practices; 98% demonstrated adequate knowledge of critical handwashing moments, and 91% accurately identified the proper handwashing steps. Among caregivers, 90% had adequate knowledge of proper handwashing. The project met all OECD/DAC evaluation criteria. **Conclusion:** The WASH project achieved its objectives by improving infrastructure and services and by training schoolchildren and caregivers, thereby contributing to a reduction in diarrhoea prevalence. Basic drinking water coverage in targeted schools and health facilities increased, with a reliable year-round supply. The project met all OECD/DAC evaluation criteria, demonstrating relevance, effectiveness, efficiency, coherence, coordination, and sustainability. The evaluation recommends that Mtama District Council and Lindi Municipal Council sustain these achievements through continued collaboration, stakeholder engagement, and shared responsibility to maintain improved WASH outcomes and ensure long-term impact in the Lindi region. **Keywords:** Diarrhoea, Waterborne Diseases, OECD/DAC, Evaluation Criteria, Tanzania, WASH

388. Mohamed, M.A., Nungu, S.M., Mrita, F., *et al*... (2025). Short-term outcomes of improvised closed suction drainage versus no drainage after primary total knee arthroplasty: A prospective Cohort Study. *Journal of Orthopaedic Reports*. Doi: 10.1016/j.jorep.2025.100679.

Abstract

Background: Congenital anomalies, including clitoromegaly, are significant challenges, particularly in resource-limited settings where access to specialized care may be lacking. Clitoral enlargement is often associated with disorders of sexual differentiation, such as congenital adrenal hyperplasia. Managing such conditions in under-resourced environments requires specialized surgical expertise and a collaborative approach. **Case presentation:** A 3-year-old girl from a resource-limited community was referred for management of clitoromegaly diagnosed since birth. Hormonal assays showed slightly elevated 17-hydroxyprogesterone, suggesting congenital adrenal hyperplasia with a 46XX karyotype. A diagnostic laparoscopy was performed, confirming normal female internal structures. Her parents were concerned about the psychological implications. Subtunical clitoroplasty, an advanced reconstructive procedure preserving neurovascular function with labial reconstruction and vaginoplasty were recommended by visiting pediatric surgeons to restore a more typical anatomical appearance. **Discussion:** The subtunical clitoroplasty was successfully performed, achieving favourable aesthetic and functional outcomes. The involvement of global health surgeons from a developed country facilitated the application of advanced techniques despite local resource constraints. This case emphasizes the value of global health collaborations in providing high-quality care in resource-limited settings. Ethical considerations, including the child's future autonomy and the psychological impact of surgery, were carefully addressed with the family. **Conclusion:** This case highlights the successful surgical management of clitoromegaly in a child from a resource-limited setting through subtunical clitoroplasty. It underscores the importance of international collaboration in advancing pediatric genital reconstruction and the need for ongoing support for both medical and psychosocial outcomes in such cases. Further research is needed to evaluate long-term outcomes in similar settings.

389. Mohtashemi, N., Spaczai, J., Guo, R., *et al.*… (2025). High HBV seroprotection rates in infants born to people with HIV and HBV infection in sub-Saharan Africa. *Vaccine: X*, Vol. 100759. Doi: 10.1016/j.jvacx.2025.100759.

Abstract

There is little data on hepatitis B surface antibody (anti-HBs) responses in HIV-exposed, uninfected (HEU) infants born to people living with HIV and hepatitis B virus infection (HBV) (HEU-HBV). We examined anti-HBs titers in infants in a post-hoc analysis of the HIV Prevention Trials Network (HPTN) 046 trial. Thirty-three infants were tested for anti-HBs at 6 and 12 months. Of these, 84.8 % had a protective response (anti-HBs >10 IU/mL) at 6 months, and 97 % had anti-HBs >10 IU/mL at 12 months. Infants with low birth weight ([LBW] ≤2500 g) had lower median anti-HBs titers at 6 and 12 months (472 IU/mL and 48 IU/mL, respectively) compared to infants without LBW, although this was not statistically significant. Anti-HBs titers at 6 and 12 months in HEU-HBV are similar to those in HIV unexposed, uninfected (HUU) infants. **Keywords:** Hepatitis B, Vaccine seroprotection, Infant vaccination, HIV/HBV

390. Mokhtar, R. R., Vesel, L., Eum, K. D., *et al.*.. (2025). Introduction of a Feeding Support Package for Low Birthweight and Preterm Infants to Improve Nutritional and Health Outcomes: A Pilot

Study in Tanzania, Malawi, and India. ***Current Developments in Nutrition*****, Vol. *9*. Doi: 10.1016/j.cdnut.2025.106492.**

Abstract

Objectives: To compare key feeding and health outcomes from baseline (BL) and after piloting the Feeding Support Package Plus (FSP+), a facility-based feeding support curriculum and package developed for mothers and their infants who are low birthweight (LBW, < 2500g) and/or preterm (< 37 weeks gestational age) in low- and middle-income countries (LMICs). **Methods:** A pre-post pilot study was conducted in six public hospitals across Tanzania, Malawi, and India. NICU-admitted, LBW and/or preterm infants were enrolled within 24 hours of birth and followed daily until discharge or 14 days of life. Baseline data were collected prior to facility-level FSP+ implementation; pilot (PL) data were collected during FSP+ implementation. Mothers received at least three counselling sessions by trained research healthcare providers around 12 key milestones. Outcomes included breastfeeding initiation within 1 hour postpartum, early and continuous KMC, exclusive breastfeeding (EBF), frequency of milk expression, and maternal breastfeeding confidence. **Results:** Overall, 168 infants were enrolled (BL 85; PL 83); 20 (11.9%) died by day 14 (BL 9; PL 11). The mean length of stay was short with significant site variation (mean (SD): BL: 5.5 (12.7) days; PL: 3.9 (8.1) days). After FSP+ implementation, key feeding and care practices improved; uptake varied by sites. Breastfeeding initiation within one hour increased from 12.9% to 36.1% (RR: 3.2, p=0.0003); mean time to first breastfeeding reduced from 6.0 (60.0) hours to 2.0 (3.2) hours. EBF rose from 35.8% to 52.4%; milk expression increased from 52.6% to 77.7%; expression frequency rose from 2.3 to 3.6 sessions per day (p=0.07). Maternal breastfeeding confidence improved significantly (p< 0.01). Lactation support also improved, with more mothers receiving help (BL 33%; PL 75%) and resolution of their breastfeeding problems (BL 63%; PL 100%). Infants ever receiving skin-to-skin care increased from 33.0% to 63.7%, and skin-to- skin care provision within one hour postpartum also rose (33.3% to 75.0%); however, no infants had KMC for a full 8 hours per day. **Conclusions:** FSP+ improved early breastfeeding initiation, maternal breastfeeding confidence, and KMC. Adaptations were made before scaling to the first implementation phase.

391. Molenaar, J., Kikula, A., Van Olmen, J., (2025). Getting the numbers right: Power, creativity and 'good'routine maternal and neonatal health data in Southern Tanzania. ***Social Science & Medicine*****, Vol. 366. Doi:10.1016/j.socscimed.2024.117668.**

Abstract

What makes routine maternal and neonatal health data to be 'good quality'? That depends on whom you ask – the people collecting and reporting these data across health system levels have different priorities and face varying constraints. Data are constructed by people, about people, and they both reflect and impact human interactions. This study analyses the power dynamics shaping how routine health data are collected and reported in labor wards of two hospitals in Southern Tanzania. We draw from focused ethnographic observation at these two labor wards and 29 in-depth qualitative interviews with health care workers (HCWs), hospital leaders, and relevant district- and regional-level managers. We distinguish between two different types of power that

shape how people engage with routine maternal and neonatal health data: authoritative and discretionary power. Authoritative power, or top-down power 'over', is reflected in how maternal and neonatal health targets and measurement demands are imposed on individuals lower in the power hierarchy. We show how this results in an environment where data are seen as 'political things' and where HCWs feel pressured and fear being blamed for poor health outcomes. Yet, data can also be a means for HCWs to exercise discretionary power – a type of bottom-up power to act creatively to deflect scrutiny and protect themselves and others. Strategically handling and manipulating data, HCWs 'get the numbers right' by balancing their own needs, top-down expectations, and structural challenges. HCWs may hereby compromise their own definitions of 'good' data, and as consequence, limit the usefulness of routine data to inform clinical decision making and health system planning. We underline the importance of supportive supervision, feasibility and perceived relevance of routine health data for those tasked to collect and report it, in order to better navigate the blurry line between constructive accountability and counter-productive pressure.

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392. Morrell, L., Tungu, M., Achola, C., *et al*… (2025). Diagnosing Burkitt Lymphoma in Sub-Saharan Africa by Sequencing of Circulating Tumor DNA: A Comparative Microcosting Study. Vol. 48. Doi: 10.1016/j.vhri.2025.101113.

Abstract

Objectives: Determining the cost of diagnosis of Burkitt lymphoma by DNA sequencing from a blood sample, compared with the current histopathology. Estimating future sequencing costs at increased scale and exploring the effect of positivity rate on per-case cost. **Methods:** We conducted a microcosting of both diagnostics. Resource use information was derived from standard operating procedures and interviews with staff. Unit cost data were from salary scales, purchase records, and publicly available prices. Costs were collected during 2021 and 2022, in the currency of purchase, and converted to common year (2024) and currency (US dollar [$]), with a discount rate of 5%. For increased scale, we assumed simple scaling up of current sample preparation and higher-capacity sequencing machines running at least once a week to maintain turnaround times. **Results:** We estimated a cost of $185.01 per patient for histopathology, with the main cost drivers being staining ($87.20, largely immunohistochemistry consumables, including $34.52 for antibodies) and the biopsy procedure ($72.29). The cost of the sequencing-based diagnostic was $710.15 at current throughput, with the largest contribution from the sequencing step because of the cost of sequencing reagents ($175.48 per sample). Costs are sensitive to throughput, reagent costs, and the efficiency of utilization of equipment. At the current prevalence, the cost per positive case is 2-fold higher at a positivity rate of 25% compared with 75%. **Conclusions:** With the current technology and throughput, sequencing is likely to increase the cost of diagnosis compared with current pathology. Costs will reduce with increased scale, which requires establishing a local reagent supply and maintenance capability. **Keywords:** Burkitt lymphoma, circulating tumor DNA diagnosis, microcostingsub-Saharan Africa.

393. Morrice, J., Mupfururirwa, W., Chianumba, R.I., *et al*… (2025). Sickle cell disease in Africa: SickleInAfrica registry in Ghana, Nigeria and Tanzania. *EJHaem*, Vol. 6(3). Doi:10.1002/jha2. 70044.

Abstract

Introduction: Sickle cell disease (SCD) is most prevalent in Sub-Saharan Africa (SSA), where incomplete patient profiles and limited management strategies hinder research and healthcare standards. **Methods:** We describe the first large-scale and multinational assessment of 13,403 SCD patients enrolled from 2017–2021 across 31 facilities in Ghana, Nigeria, and Tanzania into the SickleInAfrica consortium registry. We used hierarchical regression models to estimate and analyze the demographics, adoption levels of SCD diagnosis and therapies. **Results**: The average age at diagnosis was 3 months, 19 months and 3 years in Ghana, Nigeria and Tanzania respectively, reflecting differences in country-specific newborn screening programs and policies. Hydroxyurea (HU) use was highest in Ghana (21%), followed by Nigeria (12%) and Tanzania (6%), with significant variability across facilities. Sex differences in SCD management were observed, with males more likely to receive HU and blood transfusions. At the consortium level, HU initiation correlated with enrolment age rather than age at diagnosis, highlighting the need for earlier intervention. **Conclusions:** Our findings highlight the potential of the SickleInAfrica registry toward enhancing understanding of regional disparities in SCD care and potential gender inequalities, emphasizing the need for enabling policies toward strengthened SCD research and improved quality of life and care of patients in Africa

394. Morris, B.M., Chombo, S., Ulrich, C.M., *et al*… (2025). Sexual and reproductive health service use of unmarried adolescents in Morogoro, Tanzania: insights from a cross-sectional household survey. *Frontiers in Reproductive Health*, Vol. 7. Doi: 10.3389/frph.2025.1623714.

Abstract

Background: Adolescents in Tanzania represent a dynamic group that significantly influences public health trends, particularly in sexual and reproductive health. Despite the availability of adolescent-friendly sexual and reproductive health services (SRHS), their utilization remains low, especially among unmarried adolescents. This potentially exposes them to risky sexual behaviors, unwanted pregnancies, unsafe abortions, and sexually transmitted infections (STIs), including HIV. This paper examines the use of SRHS by unmarried adolescents in Tanzania and the factors associated with it. **Methods:** A cross-sectional household survey was conducted over eight months among 312 unmarried adolescents (15–19 years) from Morogoro Municipal and Mvomero District, Tanzania. Data collection utilized the World Health Organization (WHO)-approved Cleland questionnaire, and analysis was performed using STATA 18. To identify factors associated with service utilization, bivariate Chi-square tests and multivariable modified Poisson regression analyses were performed, with significance set at $p < 0.05$. **Results:** Among 312 unmarried adolescents, 18% had ever used SRH services. Use was significantly higher among those who had worked for pay (aRR = 1.98, $p = 0.025$) and those with sexual relationship experience (aRR = 2.27, $p = 0.007$). **Conclusion:** This paper found persistently low uptake of

SRHS among unmarried adolescents in Tanzania, despite strong national policy commitments to improve access. This highlights the gap between policy and the everyday realities of adolescents, shaped by work and relationships. Effective solutions require youth-centered interventions grounded in social spaces, peer networks, and digital platforms to improve service utilization.

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395. Morris, Z., Halabi, S.E., Hanson, C., (2025). Measuring responsiveness and respectful treatment in maternity care in sub-Saharan Africa: a questionnaire validation and development of a score. *BMC pregnancy and childbirth*, Vol. 25(1). Doi:10.1186/s12884-025-07319-3.

Abstract

Introduction: The importance of respectful maternity care on optimal maternal outcomes is increasingly acknowledged globally. However, mistreatment and abuse are still experienced by women during hospital childbirth in many parts of the world, with sub-Saharan Africa being one of the places where it is most common. Interventions aiming to improve respectful maternity care must be able to assess the prevalence of responsiveness and mistreatment women experience. This is usually done with questionnaires, though these are not always validated. Scores to represent the level of responsiveness and mistreatment experienced can be created from questionnaire results and have many uses, though no score is consistently used in this field. A new questionnaire measuring responsiveness and respectful treatment was developed for use in the ALERT project, as a questionnaire covering both of these concepts did not exist. This study aimed to validate this questionnaire and to create a scoring method. **Methods:** Psychometric analyses, including exploratory and confirmatory factor analysis, were performed on cross-sectional data collected from the ALERT study to identify and confirm underlying factors. Using these factors, simple summation and factor-weighted methods were used to create scores and their results compared. **Results:** Six factors were identified: “Communication & supportive care”, “Hospital environment”, “Maintained respect & dignity”, “Social support”, “Maintained privacy & confidentiality” and “Lack of physical & verbal abuse”. The results of the two scoring methods developed were similar. **Conclusions:** The responsiveness and respectful treatment questionnaire have high validity in the ALERT study population for the six factors identified. The two scoring methods developed are useful for different aspects of the ALERT intervention and can be used to facilitate comparisons or measure progress towards improving respectful maternity care in these settings.

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396. Moses, A., Nyang, E., Sirili, N., (2025). Effectiveness of enhanced adherence counselling on viral load suppression: From detection to completion of counselling sessions. *International Journal of STD & AIDS, Vol.* 37(*3*). Doi:10.1177/09564624251392811.

Abstract

Background: Despite Antiretroviral Therapy (ART) progress, Human Immunodeficiency Virus (HIV) remains a major issue in Tanzania (4.65% prevalence). World Health Organization (WHO) introduced Enhanced Adherence Counselling (EAC) in 2016 to improve adherence, but many patients still struggle to suppress viral load after EAC. **Objective:** This study evaluated the effectiveness of Enhanced Adherence Counselling for people living with HIV with unsuppressed viral load in Ilala, Dar es Salaam. **Methods:** A cross-sectional study was conducted in eight Ilala Care and Treatment Clinic (CTCs), selected using multistage sampling based on patient volume, for this study, patient volume was defined as the number of CTC clients, with high-volume facilities referring to those serving more than 1000 patients. Records of patients with unsuppressed viral load (≥1000 copies/mL) in 2023 were reviewed. Data were analysed in STATA SE 14 using descriptive, ordered, and multivariable logistic regression, with significance set at $p < 0.05$. **Results:** Out of 361 people living with HIV with high viral load, 86.2% enrolled in EAC and 70.9% completed it. Among completers, 68.4% achieved viral suppression. Viral load suppression was significantly associated with age and initial viral load, with younger individuals being less likely to achieve suppression, while those with lower initial viral load (VL) had a higher likelihood of suppression. Median EAC initiation time was 27 days, with most completing it within 3 months. **Conclusion:** The study reveals gaps in transitioning people living with HIV with unsuppressed viral load to EAC enrolment and completion, undermining EAC's effectiveness. While 68% viral load suppression among those who completed EAC is promising, low enrolment and retention into EAC may impact overall success. Further research is needed to explore barriers to full participation into EAC sessions and its impact on viral load suppression.

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397. Moses, M.M., Christina, V.M., Thomasi, M. (2025). Chest Computed Tomography Findings and Clinicopathological Features among Breast Cancer Patients Treated with Radiation at Ocean Road Cancer Institute. *Tanzania Medical Journal,* Vol. 36(4). Doi:10.4314/19s28394.

Abstract

Background: Radiation-induced lung changes are major health concerns among patients with breast cancer treated with radiation. The increasing rate of this kind of complication could partly be attributed to the inappropriate irradiation dosage and the recent widespread use of mastectomy plus radiation therapy as the first treatment for women with breast cancer. Even though few studies in Tanzania describe clinicopathological features and treatment of breast cancer, there is a lack of research studies addressing chest computed tomography (CT) findings in relationship to clinicopathological features among breast cancer patients treated with radiation at Ocean Road Cancer Institute (ORCI), Tanzania's national cancer centre. **Objective:** The study was conducted to determine chest CT findings and clinicopathological features among post-irradiated breast cancer patients treated at ORCI. **Methodology:** A retrospective cross-sectional study was

conducted at ORCI's Department of Radiology and Medical Imaging, utilizing patient records and diagnostic imaging data. The study comprised breast cancer patients who had completed radiation therapy and underwent chest High-Resolution Computed Tomography (HRCT) scans between March 2021 and September 2022. Data analysis involved SPSS version 23, including descriptive analysis for categorical and continuous data. A significance level of p-value <0.05 was set to identify statistically significant results. **Results:** The study included 75 breast cancer patients treated with radiations referred for chest CT. The mean age was 58.37 years. Most participants were female (97.3%), aged between 50 and 79 (73.3%), and presented with a dry cough (52.0%). Ground-glass opacity (GGO) was observed in 54.7% of the cases, making it the most common HRCT finding. The use of Cyclophosphamide in combination with other chemotherapy drugs as part of neoadjuvant or adjuvant chemotherapy was significantly associated with 0.22 times lower odds of developing GGO (p-value = 0.01). **Conclusion:** Overall, this study highlights post-radiotherapy pulmonary complications among breast cancer patients and the potential influence of Cyclophosphamide on the development of ground-glass opacities. **Recommendation:** It is advisable to conduct further prospective research to explore radiation-induced pneumonitis and the potential synergistic effects of specific chemotherapy regimens. ***Keywords:*** *Breast cancer, Organizing pneumonia, Radiotherapy, Radiation pneumonitis.*

398. Mosha, I., Mussa, T.R., Mwanga, H. (2025). Compliance with Infection Prevention and Control Standard Precautions among Physiotherapists in Regional Referral Hospitals in Dar es Salaam, Tanzania. *Tanzania Medical Journal*, Vol. 36(1). Doi:10.4314/6rnrz083.

Abstract

Background: The practice of physiotherapy entails physical contact with clients, thus posing a risk for the practitioner and client to transmit infectious diseases to other clients and health workers. Infection prevention and control (IPC) is generally recognized as a vital component of comprehensive methods for patient and health provider safety, quality improvement and improved health outcomes. **Objective**: This study aimed to assess compliance to IPC standard precautions and associated factors among physiotherapists at selected District and Regional Referral Hospitals in Dar es Salaam, Tanzania. **Methods**: A cross-sectional study using a qualitative approach was conducted. Participatory observation and in-depth interviews were used to collect data from three Regional Referral Hospitals and three District Hospitals in Dar es Salaam. Purposive sampling was used to select study participants. The in-depth interviews were digitally-recorded, transcribed verbatim, analyzed and subjected to a thematic analysis approach. **Results**: Compliance to IPC standard precautions was assessed based on the 3 major categories, namely, regular environmental cleanliness; hand hygiene and decontamination of reusable equipment. Regular environmental cleanliness and decontamination of reusable equipment compliance was poor in district hospitals while hand hygiene compliance was moderate in both district and regional hospitals. Individual factors that influenced IPC standards precaution compliance were perceived benefits for preventing infections which have positive impacts on IPC. Behaviour factors related to IPC standard precaution practices were attitude and fear of contracting infection, which increased compliance with IPC. The study findings further revealed that work-related factors which were lack of training, lack of motivation, and poor working environments contributed to poor IPC

compliance among physiotherapists. The study findings also revealed that a higher number of patients and shortage of staff led to an increase in workload, thus contributing to non-compliance with standard precautions; while supportive supervision increased compliance among physiotherapists. **Conclusion**: Physiotherapy clinic infrastructures should be improved to meet the standard requirements of the treatment room. Furthermore, in-service education on the importance of adhering to IPC among physiotherapists should be offered continuously.

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399. Moshi, L., Ally, H.M., Bakari, H.M., *et al*... (2025). Uptake of lumbar puncture and mortality among patients with advanced human immunodeficiency virus disease who screened for serum cryptococcal antigen in Africa. Doi:10.5501/wjv. v14.i2.106973.

Abstract

Background: The World Health Organization (WHO) recommends lumbar puncture (LP) procedures to assess the diagnosis of cryptococcal meningitis (CM) among patients with advanced human immunodeficiency virus (HIV) disease (AHD) with positive serum cryptococcal antigen (CrAg) and who do not have evidence of CM. **AIM:** To estimate the pooled prevalence of uptake of LP, CM, and mortality among patients with AHD. **Methods:** PubMed, Cochrane Library, and EMBASE were searched for articles published between January 2011 and December 2024. LP uptake was defined as the percentage of people who underwent LP procedures among those with AHD (CD4 ≤ 200 cells/mm^3 or WHO stage III/IV) and positive serum CrAg. Using random effects models, we computed the pooled estimate of LP uptake, CM and mortality and 95%CI. Stratified analyses were used to compare uptake of LP between studies that involved multiple *vs* single sites, and mortality analyses between patients with positive and negative serum CrAg were performed. Sensitivity analysis on LP uptake was done by excluding prospective cohort studies that reported 100% uptake. **Results**: A total of 32 studies with 46890 people with AHD screened for serum CrAg and 2730 (5.8%) had positive serum CrAg. Overall, pooled prevalence of LP uptake was 67.7% (95%CI: 54.0–81.5). The overall pooled prevalence of CM was 54.3% (95%CI: 39.7–69.0), and mortality was 6.2% (95% CI: 4.5–8.0). There are disparities in the pooled prevalence of LP uptake with studies involving multiple sites having lower prevalence compared to those that involved single sites (54.8% *vs* 84.7%, $P = 0.004$). By excluding prospective cohort studies that reported 100% uptake, the overall LP uptake was 54.5% (95%CI: 38.8–70.1). The pooled prevalence of CM was significantly lower among studies that involved multiple sites compared to those that involved single sites (6.8% *vs* 8.1%, $P \leq 0.001$). Mortality was significantly twice as high among patients who had positive serum CrAg compared to those who had negative serum CrAg [risk ratio = 2.0 (95%CI: 1.6–2.5), $P \leq 0.001$]. **Conclusion:** Nearly three to five in 10 people with AHD with positive serum CrAg did not have LP procedures done, indicating significant gaps in identifying patients with CM. Establishing a confirmed diagnosis of CM is critical to avoid exposing patients to subtherapeutic levels of antifungals pre-emptively. The capacity to perform LP and patient refusals is among the reasons for not performing the procedure. Capacity building in training health care providers to perform LP procedures and professional counselling to obtain patient consent is critical for appropriate treatment to reduce mortality associated with CM infection.

400. Mossenson, A.I., Brown, J.A., Tuyishime, E., *et al*… (2025). Assessing healthcare simulation facilitation using a competency-based tool derived from practice in low-resource settings.Vol.80(10). Doi:10.1111/anae. 16621.

Abstract

Introduction: The worldwide expansion in healthcare simulation training includes accelerated uptake in low-resource settings. Until recently, no framework has specifically delineated the competencies underpinning effective facilitation practice in low-resource settings. We describe the development of the Facilitation Behavioural Assessment Tool for simulation facilitation training and report reliability in scoring facilitation performance. This tool was informed by healthcare simulation facilittion practice in low-resource settings. **Methods:** The tool has 32 facilitation competencies, organised across three performance categories (techniques, artistry and values) and a three-point scale is used for scoring. Following a short, self-directed online training module, participants scored three videos that depicted facilitation performance at three levels. Videos were presented in a random order. Intraclass correlations and internal consistency with Cronbach's α were calculated. A random intercept 3 × 3 linear mixed model assessed discrimination across the three levels of facilitation performance and the influence of previous facilitation on scoring. **Results:** In total, 104 participants from 29 countries completed rater training and scored at least one video. The inter-rater reliability was 0.73 (95%CI 0.66–0.79) and 0.89 (95%CI 0.85–0.92) for the intraclass correlation coefficient 2 and intraclass correlation coefficient 2k, respectively. Cronbach's α was 0.84 (95%CI 0.79–0.89) for the positive video; 0.84 (95%CI 0.78–0.88) for the mixed video; and 0.91(95%CI 0.87–0.93) for the negative video. Previous simulation facilitation experience did not affect the ability to distinguish between the videos meaningfully, but novice facilitators scored facilitation behaviours higher for mixed and negative videos compared with participants with intermediate and high levels of experience. **Discussion:** Our study shows that suitable reliability and internal consistency can be achieved when using the Facilitation Behavioural Assessment Tool. We recommend using the tool to support learning conversations for simulation faculty development in low-resource settings.

401. Moyo, A.A., Bhosale, S.R., Patil, P.S., *et al*… (2025). Enhancement of antibacterial, anti-angiogenic, and anticancer properties of biosynthesized zinc oxide with bioderived mesoporous carbon. *Journal of Molecular Structure*. Vol. 1328. Doi: 10.1016/j.molstruc.2025.141344.

Abstract

Microbial infections and cancer remain significant global health challenges, accounting for high morbidity and mortality rates. Nanotechnology has emerged as a promising avenue for addressing these issues. The study aimed to synthesize and characterize zinc oxide nanoparticles (Z-1) and zinc oxide@mesoporous carbon nanocomposite (Z-2) using an aqueous extract of S. verticillata and evaluate them for their antimicrobial, anti-angiogenic, and anticancer activity. The XRD analysis confirmed that the Z-1 and Z-2 samples have a hexagonal wurtzite crystal structure, and their size ranged from 32 to 44 nm. The nanoparticles exhibited a confined size distribution of nanogranules, as shown by FESEM, with Z-2 having a larger surface area than Z-1. The Z-2

exhibited superior antifungal activity compared to Z-1, with inhibition zones of 15 mm and 11 mm against Aspergillus niger and Candida albicans, respectively. It also showed stronger antibacterial activity than Z-1, with inhibition zones of 26 mm (Bacillus subtilis), 24 mm (Staphylococcus aureus), 21 mm (Pseudomonas aeruginosa), and 17 mm (Escherichia coli). Additionally, Z-2 demonstrated significant antimycobacterial activity, inhibiting Mycobacterium avium by 11.35 77.16 % and Mycobacterium tuberculosis by 12.85–69.99 %. The anticancer activity was higher for Z-2, with an IC50 value of 78.50 µg/mL, compared to Z-1, which had an IC50 value of 103.25 µg/mL. The synthesized nanoparticles showed higher selectivity towards cancer cells, with selectivity index (SI) values of 3.55 for Z-2 and 3.13 for Z-1. Additionally, Z-2 significantly suppressed vascularization in the CAM model. Therefore, the results suggested that Z-2 showed more enhanced antimicrobial, anticancer, and anti-angiogenic activity than Z-1.

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402. Moyo, A.A., Yadav, T.B., Bhosale, S.R., *et al*... (2025). Comprehensive evaluation of essential oil from Stemodia viscosa Roxb: Chemical composition, antimicrobial, antimycobacterial, antiangiogenic, and anticancer potential with apoptosis and cell cycle analysis. *Pharmacological Research-Natural Products*, Vol. 7. Doi: 10.1016/j.prenap.2025.100250.

Abstract

Background: Stemodia viscosa Roxb., an aromatic herb, has traditionally been used in the Western Ghats region of India to treat and manage various microbial infections and cancer. **Aims:** The study aimed to explore the chemical composition, antimicrobial, anti-angiogenic, and anticancer effects of the essential oil and reveal the mechanism of action based on in vitro and ex vivo experimental techniques. **Methods:** The essential oil was extracted using hydro distillation and characterized through Gas Chromatography-Mass Spectrometry. Antibacterial and antifungal activities were tested using agar well diffusion and microdilution against Escherichia coli, Salmonella typhi, Klebsiella pneumoniae, Bacillus subtilis, Staphylococcus aureus, Candida albicans, Aspergillus niger, and Aspergillus flavus, while antimycobacterial activity was evaluated against Mycobacterium avium and Mycobacterium tuberculosis using the Alamar Blue assay. Anticancer activity was assessed using the MTT assay, while the Chick Embryo Chorioallantoic Membrane (CAM) assay was used to evaluate antiangiogenic effects. Apoptosis and cell cycle analyses were conducted using flow cytometry. **Results:** Seventy-six compounds were identified in the essential oil. The oil demonstrated significant antibacterial activity against Bacillus subtilis with a zone of inhibition **of** 16 ± 1.08 mm and a minimum inhibitory concentration (MIC) of 31.25 µg/mL. Aspergillus flavus was most affected by the oil compared to the other fungi, with a zone of inhibition measuring 17 ± 0.45 mm and a MIC value of 15.63 µg/mL. Moderate antimycobacterial activity was observed against Mycobacterium avium with an inhibition rate of 54.33 %. Strong antioxidant activity was observed, with an IC50 value of 81.25 ± 1.18 µg/mL, while the antiangiogenic effects demonstrated significant suppression of vascularization in the CAM model. The essential oil exhibited potent anticancer activity against lung cancer cells (IC50 = 49.07 ± 0.74 µg/mL) with high selectivity for cancer cells (SI = 5.34). Mechanistic studies revealed significant cell death by inducing apoptosis and causing cell cycle arrest at the G1 and G2 phases in A549 human lung cancer cells. **Discussion:** A comparison of the antimicrobial and

anticancer results revealed that the essential oil from S. viscosa exhibited significant anticancer activity, with the proposed mechanism involving cell cycle arrest in A549 human lung cancer cells. Limitations Although apoptosis and cell cycle arrest were observed, specific molecular targets or pathways responsible for the observed anticancer effects were not elucidated. **Conclusion:** Our findings suggest that S. viscosa oils could be promising candidates for further investigation as antimicrobial agents, as well as cancer chemo preventive and cancer therapeutic agents.

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403. Moyo, S. J., Manyahi, J., Aboud, S., *et al*… (2025). Extended-spectrum-β-lactamase-producing Gram-negative bacteria are associated with high mortality in children with bloodstream infections in Dar es Salaam, Tanzania. *BMC Infectious Diseases*, Vol. *25*(1). Doi:10.1186/s12879-025-11629-4.

Abstract

Objectives: Studies from Tanzania show rising prevalence of extended-spectrum β-lactamase (ESBL) amongst key bacterial pathogens. We aimed to look at the clinical impact of bloodstream infections (BSI) caused by ESBL producing Gram-negative bacteria (GNB). This study was carried out on hospitalized children aged less than five years from four hospitals of the region of Dar es Salaam. **Methods:** The study included 135 hospitalized children with BSI due to GNB which were screened for ESBL. Clinical outcome i.e., death or discharge, was known for 130 children of which 12% ($n = 15$) died We used univariate and multivariate regression analyses to compare the outcome i.e., in-hospital mortality and length of hospital stay of inpatients with BSI caused by ESBL- producing GNB vs. outcome of inpatients with BSI caused by non ESBL producing GN. **Results:** Of the 135 children, 69 (51%) and 66 (49%) had BSI due to ESBL and non-ESBL producers respectively. Of the 15 children who died, 73% had BSI due to *Klebsiella pneumoniae* or *Escherichia coli*. Mortality among children with infections caused by ESBL and non-ESBL producers were 16% and 6%, respectively. After adjusting for differences between groups regarding age, sex, and consciousness status on admission, infection with ESBL producing bacteria was a significant predictor of mortality, OR = 29; 95% CI (1.5–540). Children infected with ESBL producing GNB had longer duration of hospital stay, OR 3.2, 95% CI (1.3–7.8). Resistance towards antimicrobial agents other than penicillin's and cephalosporins was significantly higher among ESBL producers than non-ESBL producers e.g. gentamicin (60/69, 87%) vs. (6/66, 9.1%), OR = 67; 95% CI (22.3-198.9) and ciprofloxacin (37/69, 54%) vs. (7/66, 10.6%), OR = 8; 95%CI (3.9–24.3). **Conclusions:** The rapidly increasing resistance to commonly used and affordable antibiotics increases the risk of death and prolongs hospital stays in neonates in the study setting. These findings highlight the need for strengthened infection prevention and control in community settings and appropriate antibiotic use to reduce the selection and spread of ESBL-GNB in hospitals.

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404. Mpayo, L.L., Mariki, H.K., Mkony, M., *et al.*… (2025). Femoral–facial syndrome in a Black Bantu African preterm infant: a case report. *Journal of Medical Case Report,* Vol. 19(139). Doi:10.1186/s13256-025-05181-7.

Abstract

Background: Femoral–facial syndrome is a very rare condition that occurs sporadically. Few cases have been linked to maternal diabetes and genetic origin. We report a case of a preterm infant. **Case report:** A 1-day-old Black Bantu African female baby was admitted to the neonatal unit owing to multiple congenital anomalies. The mother did not seek any medical attention until her early third trimester when she had an abruptio placenta. The mother has never received antenatal folic acid supplementation. The baby had microcephaly, low-set ears, right cleft palate and lip, micrognathia, contracture, and shorter limbs. A skeletal X-ray showed femoral hypoplasia. We report this rare case and highlight the challenges in diagnosis and treatment. **Conclusion:** This is an unfortunate occurrence. Early antenatal folic acid supplementation may have averted this. An early antenatal anomaly scan and investigation after abruptio placenta would have shown the futility of the case, and intervention could have been done sooner rather than later. ***Keywords:*** *Femoral–facial syndrome, Prenatal folate, Antenatal scanning.*

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405. Mpoyi, C.M., Mashyaka, E., Mbwambo, H., *et al*… (2025). A clinical dilemma for fertility preservation in a woman with unilateral salpingectomy followed by contralateral ruptured ectopic pregnancy. A case report. *International Journal of Surgery Case Reports,* Vol. 133. Doi: 10.1016/j.ijscr.2025.111507.

Abstract

Introduction: An ectopic pregnancy (EP) occurs when the blastocyst implants outside the endometrial lining of the uterine cavity. The loss of fertility poses a dilemma in the radical treatment of ruptured ectopic pregnancy. This case report is presented in line with the SCARE criteria. Case presentation A 36-year-old woman, G3P1 + 1 L1, at 8 weeks of gestation, presented with lower abdominal pain that was localized in the left iliac region. The pain was not associated with per vaginal spotting or bleeding. Pelvic ultrasonography revealed a significant fluid collection in the pouch of Douglas. A left salpingectomy was performed. **Discussion:** A history of one ectopic pregnancy increases the risk of a subsequent EP by approximately 10 %, while having more than one previous ectopic pregnancy raises the risk to around 25 %. In communities where reproduction is believed to be an essence of womanhood, the loss of fertility carries serious socio-cultural consequences. These include not only external stigma but also internalized self-stigma that presents a significant dilemma when considering definitive treatment for a recurrent contralateral ruptured EP in a patient with a prior salpingectomy, particularly in low-resource settings, where IVF-ET and egg/embryo freezing are costly or unavailable. Surgical management of recurrent EP does not significantly impact the outcomes of IVF-ET. **Conclusion:** A patient who refuses salpingectomy after a recurrent ruptured EP faces a dilemma between preserving autonomy and preventing potentially life-threatening complications. A comprehensive approach should include

discussions about alternative fertility options, patient education, psychological support, and ensuring that all decisions are fully informed.

406. Mrema, A., Ngoma, M., Lugina, E.L., *et al*… (2025). Genotype distribution of human papillomavirus among women with cervical cancer stratified by HIV status in Tanzania. *Plos one*, Vol. 20(8). Doi: 10.1371/journal.pone.0322311.

Abstract

Background: Cervical cancer (CC) is the leading cancer among women in Tanzania, especially among those between the ages of 15 and 44. The prevalence of high-risk Human papillomavirus (HR-HPV)-16/18 women in the general population at any given time is 3.3%. HR-HPVs 16 or 18 are the primary cause of CC. The distribution of HPV genotypes among women with CC according to HIV status is unknown in Tanzania. This study aimed to determine the HPV genotype distribution according to HIV status among women with CC in Tanzania. **Methods**: This cross-sectional study was done at Ocean Road Cancer Institute (ORCI) in Tanzania among women with histologically confirmed CC. HIV serology testing was performed. Biopsy was taken from cervical lesions, and DNA was extracted. HPV DNA was amplified by using a previously validated multiplex HPV PCR assay targeting 14 high-risk HPV genotypes (16,18,30,31,33, 35, 39, 45, 51, 52, 56, 58, 59, and 66) and two low-risk HPV genotypes (6 and 11). Continuous variables were compared using either a student t-test or the Mann-Whitney U test. Fisher's exact test was employed to compare discrete variables. A P-value less than 0.05 was considered statistically significant. **Results:** We included 100 women with CC. The prevalence of HIV infection in this study was 42%. The prevalence of any HPV infection was 94%, ranging from 1–3 genotypes per woman. HPV. The median age for women living with HIV (WLWH) with CC patients was 45 years (IQR, 31–60), while the median age for HIV-uninfected women with CC patients was 57 years (IQR, 30–78). ($p = 0.0001$). WLWH and HIV-uninfected women had similar HPV prevalence, except for HPV 35, which was more common in WLWH. There was a trend of high prevalence of HPV 52 and HPV 58 in WLHH compared to HIV-uninfected women, but this difference was not statistically significant. The prevalence of HPV 16 and/or 18 infection in the entire sample was 85%. The combined prevalence of HPV 16 and/or 18 was 76% WLWH and 91% amongst HIV-uninfected women ($p = 0.036$). The majority of women (77.9%) had single-genotype HPV infection. There was no difference in the distribution of multiple or single HPV genotypes infection by HIV status ($p = 0.25$). **Conclusion**: In this study, HIV positive women with CC presented at a significantly younger age (45 years) compared to the HIV-negative women (57 years). The prevalence of high-risk HPV is high among women with CC in Tanzania. Distribution of most high-risk HPV genotypes among women with CC was not significantly influenced by HIV status except for HPV 35, which appeared to be more in HIV positive women compared to HIV-

negative women. While the majority of the high-risk HPV infections were with single HPV genotypes, the prevalence of multiple high-risk HPV infections was at 22%, with no significant difference between the two HIV statuses. A vaccination program that aptly targets HPV 16 and 18 could prevent up to 85% of CC cases in Tanzania, regardless of HIV. Keywords: Human papillomavirus, cervical cancer, HIV, Tanzania.

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407. Mrutu, S., Lugazia, E., Omari, A., *et al*... (2025). Neonatal Resuscitation Practices and Associated Factors Among Nurses in Tanzanian Delivery Suites: A Cross-Sectional Study. *EA Health Research Journal*, Vol. 9(1). Doi:10.24248/eahrj. v9i1.831.

Abstract

Background: Neonatal deaths contribute significantly to under-five mortality, with most deaths seen in sub-Saharan Africa (SSA). Birth asphyxia is the leading cause of these deaths, but it is preventable with effective resuscitation. In SSA, including Tanzania, inadequate neonatal resuscitation practice by health care providers has been identified as a significant contributor to neonatal mortality. **Aim of the study:** The study aimed to assess the current practice of neonatal resuscitation and the associated factors among nurses located in the delivery suites. **Methodology:** A hospital-based cross-sectional study was done at Muhimbili National Hospital. It involved the direct observation of 138 cases of neonatal resuscitation (NR) by 49 nurses. Proportions were used to assess practice. The chi-square and Fisher's Exact Tests were used to determine associations between provider characteristics and practice. Logistic regression models were used to identify independent predictors of practice. **Results:** Overall, 52% of neonatal resuscitation cases met standard guidelines. Adequate drying was performed in 82.6% of cases, but inappropriate stimulation occurred in 16,7%, and wet towels were discarded in only 38.4%. Initial assessment was correct in 49.6%, and airway opening in 73.3%. A good mask seal was achieved in 93%, yet the first rescue breath was correctly given in 32.1% and the second course in 27.2%. One newborn required chest compression, but they were incorrectly done. Documentation post-resuscitation was done in only 2.9% of cases. Formal training (cOR 0.181; 95% CI, 0.038 to 0.871; P=.033), in-house training (P=.049), work experience (cOR 0.368; 95% CI, 0.161 to 0.839; P=.017), and knowledge of neonatal resuscitation (cOR 0.392; 95% CI, 0.197 to 0.781; P=.008 were associated with neonatal resuscitation practice. Working experience of 3 to 5 years (AOR .352; 95% CI, 0.148 to 0.836; P=.018) was found to be an independent predictor of practice. **Conclusion and recommendation:** Neonatal resuscitation is still a challenge among providers working in delivery suites. Working experience is an independent predictor of practice, but other factors, such as knowledge level, training, and ongoing in-house training, are equally important. Regular training, integration of neonatal resuscitation into continuous professional development, and embedding resuscitation performance in quality improvement frameworks are recommended.

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408. Msangi, S.Z., Saleh, M., Mboka, J., *et al*… (2025). Nasopharyngeal carcinoma in a 15-year-old: A rare pediatric tumor. *Radiology Case Reports*, Vol. 20(9). Doi: 10.1016/j.radcr.2025.05.022.

Abstract

The unique challenges of diagnosing, treating, and managing pediatric nasopharyngeal carcinoma (NPC) in a lower-middle-income African country, Tanzania, are presented. Also, Computed Tomography (CT) imaging features that can distinguish NPC from other pediatric head and neck tumors are highlighted. **Keywords:** Nasopharyngeal carcinoma, Pediatric, Fossa of Rosenmuller, Radiotherapy, Chemotherapy

409. Msenga, U., Ambikile, J.S., Buluba, S.E. (2025). Prevalence of anxiety and depression symptoms and associated factors among women diagnosed with breast cancer: A cross-sectional study at Ocean Road Cancer Institute in Dar es Salaam, Tanzania. *PLoS One*, Vol. 20(7). Doi: 10.1371/journal.pone.0326749.

Abstract

Introduction: Anxiety and depression are the prevailing mental illnesses in low and middle-income nations. The shock of receiving a breast cancer diagnosis and its effects on daily life make it perplexing to adjust to the situation, hence anxiety and or depression symptoms develop. This study aimed to determine the prevalence and factors associated with anxiety and depression symptoms among women diagnosed with breast cancer at Ocean Road Cancer Institute (ORCI) in Dar es Salaam, Tanzania. **Methods:** We conducted an analytical quantitative cross-sectional study between May and June 2023 among 384 women diagnosed with breast cancer using consecutive sampling. We used a pre-tested interviewer-administered questionnaire to collect data, and the Statistical Package for Social Sciences (IBM SPSS) version 23 for data analysis. Bivariate and multivariate logistic regression analyses were performed to identify factors associated with anxiety and depression symptoms, and a p-value <0.05 was considered statistically significant. **Results:** We found a relatively high prevalence of anxiety (44.8%) and depression (50.5%). Participants who didn't know their stage of cancer [adjusted Odds Ratio (aOR): 0.39; 95% Confidence Interval (CI): 0.19, 0.83; p = 0.014]; in early stage of cancer [aOR: 0.36; 95%CI: 0.16, 0.81; p = 0.014]; with low state of hope [aOR: 0.52; 95%CI: 0.31, 0.86; p = 0.012]; and low cognitive reappraisal [aOR: 2.09; 95%CI: 1.33, 3.28; p < 0.001] were significantly associated with anxiety. Those without partners [aOR: 2.56; 95%CI: 1.59, 4.10; p < 0.001]; didn't know their stage of cancer [aOR: 0.38; 95%CI: 0.17, 0.86; p = 0.020]; receiving radiotherapy treatment [aOR: 3.86; 95% CI: 1.34, 11.08; p = 0.012]; and low cognitive reappraisal [aOR: 2.41; 95%CI: 1.52, 3.83; p < 0.001] were significantly associated with depression. **Conclusion:** Symptoms of depression and anxiety were very common among women diagnosed with breast cancer in this study. We strongly advise for proper care, including routine screening from mental health specialists, to improve treatment outcomes among this population group.

410. Msengwa, Z., Bojer, M.S., Rwegoshora, F, *et al*... (2025). Mutation Rates and Fitness Genes in Staphylococcus aureus Treated with the Medicinal Plant Synadenium glaucescens. *Applied Sciences*, Vol. *15*(15). Doi.org/10.3390/app15158753.

Abstract

Extracts, fractions, and the pure compound epifriedelanol of the medicinal plant *Synadenium glaucescens* have antibacterial properties. Herbal products are generally considered less prone to

resistance development than conventional antimicrobials, as they contain multiple compounds, which makes bacteria less likely to develop resistance. However, data supporting this notion are lacking. This study evaluated the development of resistance in *Staphylococcus aureus* subjected to extract, fractions and epifriedelanol of *S. glaucescens*. It also identified *S. aureus* fitness genes contributing to intrinsic resistance to extract of *S. glaucescens*. Fluctuation and gradient concentration assays were used to determine mutation rates and growth adaptation, respectively, which were lower following exposure to growth in crude extract than the pure compound epifriedelanol. By subjecting 1920 single gene mutants from the Nebraska Transposon Mutant Library to growth in the presence of extract of *S. glaucescens*, 12 genes were identified as important for natural resistance in *S. aureus* JE2; however, only mutation in the *hemB* gene decreased the minimum inhibitory concentration by greater than 4-fold (64-fold). In conclusion, purifying active antimicrobial compounds from *S. glaucescens* and using them as antibacterial substances as an alternative to crude extract increased the risk of resistance development. Further, the gene *hemB* appears to have a significant role in the natural resistance to the extracts obtained from *S. glaucescens* in this study. ***Keywords:****intrinsic resistance;mutation rate;fluctuationassay; gradient concentration; Staphylococcusaureus; Synadeniumglaucescens; antimicrobials; antimicrobial resistance*.

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411. Msilanga, D. P., Kwong, Y. D. (2025). Classifying Severe Acute Kidney Injury in Cirrhosis: Implications for Mortality? *Kidney360*, Vol. 6(2). Doi:10.34067/kid.0000000637.

Abstract

Severe AKI requiring KRT in patients with cirrhosis is associated with high rates of mortality.[1] AKI in patients with cirrhosis can be classified into common phenotypes on the basis of etiology: prerenal (volume-mediated), intrinsic (ischemic or nephrotoxic), or postrenal (obstructive) causes. Unique to patients with cirrhosis, hepatorenal syndrome (HRS), a specific type of prerenal AKI, may also occur as a result of splanchnic vasodilation, leading to a reduction of effective arterial blood volume, compensatory renal vasoconstriction, and eventually decreased renal blood flow.[2] Differentiating HRS versus non–HRS-related AKI is challenging, yet has significant therapeutic implications. US and European guidelines recommend intravenous albumin infusion combined with vasoconstrictors, such as terlipressin in HRS-AKI.[3,4] However, limited studies exist on the prognostic implications of mortality in those with HRS versus non-HRS AKI, especially among patients with cirrhosis who require KRT. In this issue of Kidney360, using data from 374 patients with AKI that required KRT in 2019 from the HRS-Harmony consortium that collects data from 11 US Hospitals, Cama-Olivares *et al.* evaluated the association of AKI etiology with 90-day mortality.[5] HRS-AKI was identified as the AKI etiology in 17.4%, while 82.6% were classified as having non-HRS AKI, with 62.6% specifically diagnosed with acute tubular necrosis (ATN). The total 90-day mortality rate was 59.6%, with 49.2% of those with HRS-AKI and 65.8% with ATN dying within the timeframe. A Fine-Gray analysis, which accounts for the competing risk of liver transplantation, showed that HRS versus non-HRS AKI were not significantly associated with increased 90-day mortality (subdistribution hazard ratio, 1.36; 95%, 0.95 to 1.94).

Of the total cohort of 374 patients with cirrhosis who were initiated on KRT, 26.5% were listed for liver transplant and 17.1% were transplanted, with 90-day mortality being significantly lower in those listed versus those who were not (28.3% versus 70.9%). Compared with patients without HRS-AKI, those with HRS-AKI received more vasoconstrictors (81.5% versus 67.9%). Those with HRS-AKI were more frequently listed and received liver transplants. Key parameters associated with 90-day mortality include vasopressor use for shock, initial dialysis modality of continuous (versus intermittent) KRT, high disease severity score, and not being listed for liver transplant. This study may be one of the larger multicenter contemporary cohort of patients with AKI who require KRT with cirrhosis. Allegretti *et al.* previously analyzed data from 472 patients with cirrhosis who were initiated on KRT at five hospitals between 2005 and 2015 and found a 6-month mortality of 84% in patients with HRS and 85% in patients with ATN.[6] Similar to Cama-Olivares *et al.*, Allegretti *et al.* found no significant difference in outcomes between those diagnosed with HRS versus ATN regardless of transplant listing status. Both studies assessed AKI etiology using two adjudicators and a third referee providing a tiebreaker diagnosis when necessary. Overall, the data seem to signal that diagnosis of HRS versus non-HRS AKI may not be associated with prognosis; instead, mortality in this population is likely driven by disease severity.[5–7] AKI adjudication may be difficult in cirrhosis because patients often have overlapping clinical syndromes; ATN and severe forms of HRS-AKI remain difficult to distinguish in clinical practice. Traditionally, HRS-AKI is a diagnosis of exclusion characterized by the absence of where patients have no current or recent use of nephrotoxins exposure, no signs of shock, and no signs of structural kidney injury, as indicated by proteinuria, microhematuria, and/or abnormal renal ultrasound.[3] In this study, fractional excretion of sodium, collected in 61% of the population, did not significantly differ between groups. Urine microscopy may point to ATN with tubular epithelial casts, but samples in severe AKI are often unavailable during severe oliguria. Growing recognition of the potential benefit that patients with existing structural kidney damage may still derive from HRS treatment has led to an updated definition of HRS-AKI by the Acute Disease Quality Initiative and International Club of Ascites and evidence of pre-existing structural damage no longer precludes the diagnosis of HRS-AKI.[8] Current evidence indicating the lack of association between AKI etiology and mortality may be limited by the retrospective nature of the existing studies and residual confounding factors. The suspected etiology of AKI likely modified interventions and affected mortality outcomes. Results may be further biased as not all patients with decompensated cirrhosis are initiated on KRT. Generalizability is also restricted because these studies were conducted solely in US hospitals with abundant resources and access to transplant services centers. By expanding from five hospitals to 11 US hospitals, Cama-Olivares *et al.* more comprehensively described mortality rates in patients with cirrhosis and AKI that require KRT while accounting for the heterogeneity of KRT initiation practices in different institutions. The study strongly demonstrates that, even in resource-abundant settings, mortality of patients with cirrhosis with AKI that require KRT is high. In settings with limited access to transplant, the mortality rates are suspected to be even higher. KRT is often viewed as a supportive therapy for patients with cirrhosis who are candidates for liver transplant, but remains highly controversial for patients who are not. Current evidence supports that patients with HRS requiring KRT have comparable outcomes with those with cirrhosis and non-HRS AKI, such as ATN also requiring KRT. The study results challenge the common assumption that HRS carries a worse prognosis than

other AKI etiologies, underscoring the need to focus on overall illness severity. For patients who are not liver transplant candidates, the decision to initiate dialysis in patients with cirrhosis and AKI should not be based on the suspected etiology of AKI. Instead, a comprehensive care team approach involving palliative care expertise is recommended to initiate discussions with patients and their caregivers regarding the goals of therapy in the face of poor long-term prognosis. For patients who undergo KRT and are not liver transplant candidates, it remains unclear whether these patients achieve sufficient longevity to counterbalance the detriment to the quality of life as a result of undergoing dialysis, which may lead to worsening fatigue, cramps, and potential for increased instability during ultrafiltration for volume optimization. Further studies are needed among patients who choose palliative alternatives. Ultimately, this HRS-Harmony study, which reports data from 2019, presents valuable baseline information on outcomes in patients with cirrhosis and AKI requiring KRT before the US rollout of terlipressin. In 2022, the Food and Drug Administration approved terlipressin for the treatment of HRS-AKI after the results of the A Multi-Center, Randomized, Placebo Controlled, Double-Blind Study to Confirm Efficacy and Safety of Terlipressin in Subjects With Hepatorenal Syndrome Type 1 (CONFIRM) trial, where 300 patients with HRS were assigned in a 2:1 ratio of terlipressin or placebo up to 14 days.[9] The CONFIRM trial showed no significant differences in 90-day all-cause mortality. As such, the mortality rates between severe HRS-versus non-HRS AKI may not change significantly in the future. However, CONFIRM showed significantly higher rates of HRS reversal among those with terlipressin (32% versus 17%). Notably, the trial excluded patients who were initiated on dialysis and patients who were found to have tubular epithelial casts. The future remains undetermined as to whether terlipressin will be routinely deployed in those with AKI with suspected overlapping HRS and ATN who are at the cusp of needing KRT. Perhaps terlipressin use in these patients may lead to less ongoing ischemic damage and improve a patient's chance of renal recovery in the setting of cirrhosis, eventually limiting mortality complications related to KRT. However, as terlipressin use becomes more widespread, the benefits of renal recovery must be carefully weighed against the risks of respiratory death. Identifying the subpopulations of those with cirrhosis of AKI who are at low risk of pulmonary compromise with high possibility of renal recovery with terlipressin seems to be the forthcoming challenge. With rigorous scientific guidance in the optimal population for terlipressin use, the signal in decreased mortality may eventually follow.

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412. Msilanga, D., Msangi, E. (2025). Prevalence and predictors of kidney dysfunction among people living with HIV in Tanzania. *PLOS Global Public Health*, Vol. *5*(8). Doi: .1371/journal.pgph.0005011

Abstract

As people living with HIV (PLHIV) in sub-Saharan Africa live longer due to widespread access to antiretroviral therapy (ART), the burden of non-communicable diseases, including kidney dysfunction (KD) has increased. Existing studies in Tanzania show varying prevalence and inconsistent predictors of KD, highlighting the need for updated, context-specific data. We conducted a cross-sectional sub-analysis of data from a larger study assessing point-of-care creatinine testing. PLHIV aged ≥18 years attending the HIV clinic at Temeke Regional Referral

Hospital (TRRH) in Dar es Salaam from 5th January to 30th March 2025, who consented to participate, were included. Renal function was assessed using serum creatinine measured via the Jaffé method, and eGFR was calculated using the CKD-EPI 2021 equation. Kidney dysfunction was defined as eGFR < 60 mL/min/1.73 m². Logistic regression was used to identify predictors. Ethical approval was obtained from the National Institute for Medical Research (NIMR) under reference number NIMR/HQ/R.8a/Vol.IX/4695. Among 358 participants, the majority were female (66.2%) and aged ≥45 years (62.3%). The prevalence of KD was 15.6%, with 24.6% reporting at least one comorbid condition. In multivariable analysis, the presence of comorbidities was the only independent predictor of KD (aOR: 3.93; 95% CI: 1.85–8.36; p < 0.001). Only 5.3% of participants with reduced eGFR had a prior diagnosis of kidney disease. Kidney dysfunction is a significant but underdiagnosed comorbidity among PLHIV in urban Tanzania. Comorbid conditions, especially hypertension, are major contributors to reduced kidney function, and integrating non-communicable disease screening and management into HIV care is needed to enable earlier detection and improve long-term renal outcomes.

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413. Msilanga, D., Mngumi, J., Msangi, E., *et al*... (2025). Pregnancy-related acute kidney injury requiring dialysis: experience from a tertiary hospital in Tanzania. *BMC nephrology*, Vol. 26(1). Doi: 10.1186/s12882-025-04519-z.

Abstract

Introduction: Women with pregnancy-related acute kidney injury (PRAKI) often present in a state of critical illness, commonly due to severe hypertensive disorders or other obstetric complications. Those requiring dialysis represent the most severe end of this spectrum, where outcomes are further worsened in low-resource settings by delayed diagnosis, limited access to timely nephrology care, and constrained critical care capacity. Despite this burden, data on pregnancy-related acute kidney injury requiring dialysis (PRAKI-D) in Tanzania are limited. This study describes the clinical characteristics and in-hospital outcomes of these patients at a tertiary hospital. **Methods:** We conducted a retrospective cohort study at Muhimbili National Hospital, including all pregnant and post-partum women, defined as those who were pregnant, in labor, or within six weeks postpartum with PRAKI who received hemodialysis between January 2022 and December 2024. Data were extracted from medical records and included clinical characteristics, dialysis indications, and in-hospital outcomes. Descriptive statistics were used for analysis. **Results:** We analyzed 112 patients with pregnancy-related acute kidney injury requiring dialysis, with a mean age of 31.3 (± 6.2) years. Most were referred from lower-level facilities (95.5%) and presented with acute kidney injury (AKI) stage three (51.8%) according to Kidney Disease: Improving Global Outcomes (KDIGO). Hypertensive disorders were the leading obstetric diagnosis (67%). At dialysis initiation, 68.8% were admitted to high-dependency or intensive care units, and 42.8% required ventilator support. In-hospital mortality was 17.9%. Among survivors, (67%) were lost to follow-up at three months. **Conclusion:** Our findings highlight the high burden and adverse outcomes of pregnancy-related acute kidney injury requiring dialysis, emphasizing the need for earlier detection, improved referral systems, and integrated postpartum renal follow-up to reduce morbidity associated with acute kidney injury. ***Keywords:*** *Acute kidney injury (AKI), Pregnancy-related AKI, High risk pregnancy, Hemodialysis, Pregnancy.*

414. Msilanga, D., Muiru, A., Msangi, E., *et al*… (2025). Point-of-care creatinine-based eGFR (Stat Sensor) in detecting kidney dysfunction (KD) among people living with HIV in Tanzania. *Plos one,* Vol. 20(9). Doi: 10.1371/journal.pone.0331969.

Abstract

Introduction: Kidney Dysfunction (KD) is prevalent among people living with HIV (PLHIV) in low- and middle-income countries (LMICs), but routine screening is limited due to inadequate laboratory infrastructure. The StatSensor® Point-of-Care (POC) Creatinine Test offers a rapid, cost-effective alternative for early KD detection, though its accuracy in PLHIV remains uncertain. **Methods:** We conducted a diagnostic accuracy cross-sectional study at Temeke Regional Referral Hospital (TRRH) HIV Clinic from January to March 2025 among PLHIV aged ≥18 years. Kidney dysfunction (KD) was defined as an estimated glomerular filtration rate (eGFR) <60 mL/min/1.73 m² using the CKD-EPI 2021 equation. We compared StatSensor point-of-care eGFR results with eGFR derived from serum creatinine measured by the Jaffe method. Diagnostic performance metrics including sensitivity, specificity, predictive values, and receiver operating characteristic (ROC) curves were reported. **Results:** Among 358 participants, the median age was 48 years, with 66.2% female and 15.6% having KD (eGFR < 60 mL/min/1.73m²). The StatSensor demonstrated 92.9% sensitivity, 94.7% specificity, and 94.4% overall diagnostic accuracy compared to the Jaffe method. The ROC curve (AUC = 0.938) indicated strong test performance, showing substantial agreement with a kappa value of 0.805. Bland-Altman analysis revealed a negative bias of 4.36 mL/min/1.73 m² with limits of agreement from −19.68 to 28.40 and a strong correlation (R^2 = 0.813) between the two methods. **Conclusion:** The StatSensor POC Creatinine test demonstrated high diagnostic accuracy and strong agreement with the standard Jaffe method, indicating its potential as a reliable screening tool for kidney dysfunction in PLHIV in resource-limited settings.

415. Msilanga, D., Nkwera, U., Punatar, P., *et al*… (2025). Work and Dialysis: Navigating Employment Challenges Among Young Adults on Maintenance Hemodialysis in Tanzania. *International Journal of Nephrology, (*1). Doi:10.1155/ijne/9980961.

Abstract

Introduction: Chronic kidney disease (CKD) increasingly affects young adults in low-and middle-income countries, with significant social and economic consequences. In Tanzania, many patients begin dialysis during their most productive years, often disrupting employment and financial stability. This study aimed to examine employment patterns and dialysis-related work challenges among young adults on maintenance hemodialysis at Muhimbili National Hospital. **Methods:** We conducted a hospital-based cross-sectional study at Muhimbili National Hospital from October to December 2024, involving adults aged 18–49 years on maintenance hemodialysis for at least three months. Data were collected using a structured questionnaire and supplemented with clinical records to assess sociodemographic, dialysis-related, employment, and transplant-related factors. Descriptive statistics were used to summarize the findings. **Results:** We included 134 patients aged between 18 and 49 years, with a mean age of 35.8 years (SD: 8.9). A total of 58.3% were either employed or self-employed, with 44.9% reporting that they did not work on dialysis days. Among those working, 65.4% experienced changes in their work patterns due to

treatment demands, and 42.4% worked fewer than 4 days per week. Among the unemployed participants (24.6%), more than half (57.6%) reported resigning from work due to dialysis-related challenges. Out-of-pocket payment for dialysis was common, reported by 52.3% of participants. Although awareness of kidney transplantation was high (92.5%), only 27.6% had previously pursued or were actively pursuing it, primarily hindered by the absence of a donor (48.3%), high cost (23.0%), or both (28.7%). **Conclusion:** Young adults on maintenance hemodialysis in Tanzania face significant employment disruptions and limited access to kidney transplantation, highlighting the need for integrated interventions to support their social and economic well-being.

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416. Msilanga, D., Shoo, J.S.J., Msilanga, J.M. (2025). Wcn25-18 Patterns of Vascular Access Among Chronic Kidney Disease Patients on Maintenance Hemodialysis in Tanzania. *Kidney International Reports*, Vol. 10(2).

Abstract

Introduction: Vascular access profoundly impacts the quality of care for chronic kidney disease (CKD) patients on hemodialysis (HD), with arteriovenous fistulas (AVFs) being recommended for their superior outcomes. However, due to accessibility challenges and limited technical expertise, the use of recommended access methods is likely limited in Tanzania and other Sub-Saharan African countries. Therefore, this study aims to describe the pattern of vascular access use among chronic kidney disease (CKD) patients on maintenance hemodialysis at Muhimbili National Hospital, highlighting previous and current practices as well as potential areas for improvement. **Methods:** A cross-sectional study to describe the pattern of vascular access among patients with CKD on maintenance hemodialysis therapy was conducted at MNH in Dar es Salaam. Descriptive statistics were used to summarize characteristics and patterns of vascular access. **Results:** We analyzed 200 study participants, with a mean age of 53.3 years. Almost all participants (95.5%) were initiated on hemodialysis with non-tunneled central venous catheters (NTCVCs), and a substantial proportion (25.5%) continued to use NTCVCs. Despite this trend, a significant proportion of patients transitioned from NTCVCs to tunneled CVCs (39.5%) or arterio-venous fistulas (AVFs) (35%). The mean duration of NTCVC before transitioning to tunneled or AVF was 7.1 months. **Conclusions:** Our study highlights the prevalent use of non-tunneled central venous catheters (CVCs) as the primary vascular access method for CKD patients undergoing hemodialysis at Muhimbili National Hospital, Tanzania. These findings underscore the urgent need for interventions to improve access to AVFs and enhance vascular access management, ultimately optimizing patient outcomes in resource-limited settings. I have no potential conflict of interest to disclose. I have no potential conflicts of interest. I did not use generative AI and AI-assisted technologies in the writing process.

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417. Msonde, S.E., Chamvanga, R.A. (2025). Mapping research growth and citation trends of scholarly works on health information literacy in Africa: A bibliometric analysis. *Journal of Information Science*.Doi: 10.1177/01655515251379052.

Abstract

Over the past decade, the output of global research on health information literacy (HIL) has grown exponentially. This growth was revealed via bibliometric analysis. Most bibliometric studies examining the growth and trends of HIL publications have been conducted in the European Union and the United States. In contrast, very few studies of this nature have been conducted in Africa. This study aimed to map the scholarly output of HIL produced by African scholars. The Dimensions database was the primary data source for collecting research outputs between 2003 and 2024. The researchers screened the harvested articles before importing them into Microsoft Excel for analysis and tabulation and then used OriginPro and VOS viewer to generate network visualisation maps. The results indicate a significant increase in publications and citation trends. However, there are variations in research performance and citation impact among countries, with South African institutions leading in research productivity, followed by those in Uganda and Ghana. Therefore, consistent growth in scholarly publications, collaborative authorship patterns and increased citation trends underscore African scholars' critical role in advancing HIL as a vital component of public health, education and sustainable development in Africa.

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418. Msongela, M., Musiba, G., Mohamed, J.A., *et al*... (2025). In-hospital survival of adults with HIV-associated cryptococcal meningitis in Tanzania: A retrospective comparison of amphotericin B-based regimen and fluconazole monotherapy. *PLoS One*, Vol. 20(12)

Abstract

Objective: This study aimed to examine treatment modalities, outcomes, and factors associated with in-hospital survival among people with HIV (PHIV) diagnosed with cryptococcal meningitis (CM) in Tanzania. **Methods:** This hospital-based cross-sectional study retrospectively reviewed records of PHIV admitted to medical wards at Dodoma and Singida Regional Referral Hospitals in Tanzania from July 2019 to June 2024. Data on socio-demographics, antiretroviral therapy (ART) status, CD4 count, treatment, and outcomes were extracted using a standardised data collection tool. The primary outcome was in-hospital survival (discharged alive vs died). Descriptive statistics summarized patient characteristics, and modified Poisson regression with robust variance estimated adjusted risk ratios (aRR) for factors associated with being discharged alive. **Results:** A total of 159 PHIV with CM records were reviewed. Of these, 89 (56.0%) were aged 36–55 years, 89 (56.0%) were female, and 138 (86.8%) were in WHO clinical stage IV. Of 159 patients, 88 (55.3%) received fluconazole monotherapy. In-hospital mortality among CM patients was 65 (46.5%). Discharge alive occurred in 61/73 (83.6%) of those on amphotericin B–based regimens versus 13/66 (19.7%) on fluconazole monotherapy. Patients treated with amphotericin B–based regimens were four times more likely to be discharged alive compared to those on fluconazole monotherapy (aPR = 4.19, 95% CI: 2.46–7.16, $p < 0.001$). **Conclusion:** CM remains a leading opportunistic infection causing high mortality among PHIV, with most patients managed using

fluconazole monotherapy. In-hospital survival was significantly higher with amphotericin B–based regimens, highlighting the need to align practice with guideline recommendations. Further qualitative research is warranted to explore barriers to implementing recommended CM treatment.

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419. Msuya, E.V., Kalinga, E., Sangu, L., *et. al*… (2025). Prevalence of Diabetes Mellitus Among People Living with HIV and Receiving Antiretroviral Therapy at Muhimbili National Hospital in Tanzania. *Cureus,* Vol. 17(11). Doi: 10.7759/cureus.96800.

Abstract

Background: With the widespread use of antiretroviral therapy (ART), people living with HIV (PLWHIV) are experiencing an extended life expectancy and a rising burden of non-communicable diseases, including diabetes mellitus. The interaction between HIV infection, long-term ART exposure, and metabolic alterations remains poorly understood, particularly in sub-Saharan Africa. This study aimed to determine the prevalence of diabetes mellitus and identify associated risk factors among PLWHIV receiving ART in Tanzania. **Methodology:** A cross-sectional study was conducted among 409 PLWHIV attending the Muhimbili National Hospital HIV Care and Treatment Clinic in Dar es Salaam, Tanzania. Data on sociodemographic, clinical, and laboratory characteristics were collected using a structured questionnaire and patient medical records. Variables included age, gender, CD4 count, body mass index, ART regimen and duration, and family history of diabetes. Diabetes mellitus was defined according to the WHO criteria as fasting plasma glucose ≥7.0 mmol/L or documented use of glucose-lowering medication. Logistic regression analysis was used to identify factors independently associated with diabetes, and statistical significance was set at a p-value <0.05. **Results:** The mean age of the participants was 44.7 years, and 65.3% (n = 267) were female. The prevalence of diabetes mellitus was 3.7% (n = 15). Independent predictors of diabetes included older age (adjusted odds ratio (AOR) = 1.14; 95% confidence interval (CI) = 1.05-1.25; p = 0.003), absence of a family history of diabetes (AOR = 0.07; 95% CI = 0.02-0.27; p < 0.001), and CD4 count <200 cells/µL (AOR = 0.14; 95% CI = 0.02-0.88; p = 0.036). The majority of participants (89.4%) had CD4 count ≥200 cells/µL, and 98.3% achieved viral load suppression. **Conclusions:** Diabetes mellitus was observed in 3.7% of PLHIV receiving ART in this clinic cohort. These findings support the need to maintain routine opportunistic blood glucose screening and reinforce metabolic health counseling within HIV care. However, we cannot infer excess risk compared to the general Tanzanian population because no age-standardized comparison was performed, and diagnostic ascertainment was limited to fasting plasma glucose.

420. Mtaya, M., Justinian, G., Amani, D. E., *et al*… (2025). Malocclusion in Tanzania: Prevalence and Effects on Oral Health Related Quality of Life Among School Children. *European Annals of Dental Sciences*, Vol. 52(3). Doi:10.52037/eads.2025.0024.

Abstract

Purpose: To assess the prevalence and factors associated with malocclusion and dental services utilization among primary school children in Dar es Salaam. **Materials and methods:** A secondary data analysis was conducted using R software version 4.3.3 to analyze data of students from nine schools in Dar es Salaam region, Tanzania. Information on demographics, dental clinic visits, and malocclusion traits were abstracted. Descriptive measures - frequency and proportion were used to summarize the categorical variables and the log-binomial regression to assess the association between independent variables and the two binary outcomes – malocclusion and attending dental clinic, at a significance level of p less than 0.05. **Results:** A total of 620 school children were enrolled: 63.2% were female and 60.6% were aged 11 to 12 years. Two-thirds of the population (66.5%) had malocclusion and less than a quarter (23.1%) never attended a dental clinic. Children whose fathers had primary education had 25% increased risk for malocclusion, whereas those of less educated mothers had 34% (95% CI; 0.47-0.93) decreased chances of attending dental clinics. **Conclusion:** The burden of malocclusion and associated effects on oral health-related quality of life is high, demonstrating the need for targeted interventions. Socioeconomic empowerment and improving dental services are inevitable as they impact the oral health related quality of life. **Keywords:** BurdenDental services utilizationMalocclusion.

421. Mtenga, A.B., Fimbo, A.M., Shewiyo, D.H., *et. al*... (2025). Efficacy of Antifungal Medicines Against Clinical Isolates of Candida Species Responsible for Vaginal Candidiasis from Regional Referral Hospitals in Tanzania. *American Journal of Life Sciences*, Vol. 13(6). Doi: 10.11648/j.ajls.20251306.13.

Abstract

Vaginal candidiasis, caused by Candida species affects a significant proportion of women worldwide. Although different antifungal medicines are being used to treat the infection, the emergence of resistance against these medicines have been reported. This study assessed the efficacy of antifungal medicines which are recommended for treatment in the Tanzania Standard Treatment Guidelines against clinical isolates of Candida spp. Presumptive Isolates of Candida spp. collected from Regional Referral Hospitals (RRH) were transported to the Tanzania Medicine and Medical Devices Authority (TMDA) Microbiology laboratory for identification and confirmation by PCR. The confirmed isolates were used for susceptibility testing to establish the efficacy of antifungal medicines. Results indicate that Candida albicans (54%) was the most prevalent Candida spp. among isolates collected. Among the antifungal medicines tested, Miconazole showed the highest efficacy against 229 isolates of Candida spp. with 89.2% of the isolates being susceptible. This was followed by Clotrimazole, with 79.9% and Nystatin, 79.5% of isolates were susceptible, while Voriconazole showed moderate efficacy with 68.9%. Fluconazole demonstrated the lowest efficacy among the tested antifungals with 63.3%. Both Candida albicans and non-albicans Candida spp. displayed similar susceptibility patterns. Out of the 229 Candida

spp. isolates tested, 4.4% were found to exhibit multidrug resistance. Findings from this study suggest that despite the observed resistance, the majority of antifungal medicines listed in the Standard Treatment Guidelines in Tanzania remain effective and are still considered reliable for treating vaginal candidiasis. ***Keywords:*** *Antifungal Efficacy, Candida albicans, Vaginal Candidiasis, Antifungal Resistance, Multidrug Resistance.*

422. Mugusi, S., Lema, J., Ponsian, P., *et al*… (2025). Diagnostic accuracy of sputum smear microscopy compared with culture in patients with tuberculosis confirmed by Xpert Mycobacterium tuberculosis/rifampicin assay in Tanzania: A cross-sectional study. *Journal of International Medical Research*, Vol. 53(10). Doi:10.1177/03000605251390703.

Abstract

Objective: To assess the diagnostic accuracy of sputum smear microscopy compared with culture in patients who were already confirmed positive for tuberculosis by Xpert Mycobacterium tuberculosis/rifampicin assay in Tanzania. **Methods:** A cross-sectional study was conducted across five tuberculosis clinics in Dar es Salaam. Adults (aged 18–80 years) with symptoms of tuberculosis and a positive Xpert Mycobacterium tuberculosis/rifampicin assay result provided additional sputum specimens for smear microscopy using Ziehl–Neelsen staining and culture on Löwenstein–Jensen medium, processed at the Central Tuberculosis Reference Laboratory, Muhimbili National Hospital. **Results:** We enrolled 200 participants, with a median age of 35 (interquartile range: 27–46) years; 74.5% of them were male. Using culture as the reference, Ziehl–Neelsen smear microscopy showed a sensitivity of 86.6% and a specificity of 40.7%. The Xpert Mycobacterium tuberculosis/rifampicin assay showed higher diagnostic accuracy. Notably, 43% of smear-negative cases were culture-positive, indicating that smear microscopy alone led to a substantial proportion of missed diagnoses. The Ziehl–Neelsen smear's receiver operating characteristic curve had an area under the curve of 0.64, indicating moderate performance. **Conclusion:** This study underscores the limitations of smear microscopy and highlights the operational utility of the Xpert Mycobacterium tuberculosis/rifampicin assay. In regions where Xpert Ultra remains inaccessible, combining Xpert with culture selectively may enhance detection in low-resource settings.

423. Mugusi, S.F., Shayo, G.A., Sasi, P.G., *et al*… (2025). Kidney disease among adults on tenofovir-based second-line antiretroviral therapy in Dar es Salaam, Tanzania. *Southern African Journal of HIV Medicine*, Vol. 26(1). Doi: 10520/ejc-m_sajhiv_v26_n1_a1640.

Abstract

Background: Kidney disease is a growing non-AIDS-related comorbidity among people living with HIV (PLWH). Tenofovir disoproxil fumarate (TDF) can result in proximal tubulopathy and acute tubular injury, whereas atazanavir/ritonavir (ATV/r) can cause interstitial nephritis and renal stones, both of which can lead to chronic kidney disease. **Objectives:** To examine the relationship between second-line combination antiretroviral therapy (ART) and the risk of kidney disease and morphological changes among PLWH in Dar es Salaam, Tanzania. **Method:** A cross-sectional study of adult PLWH receiving TDF-based second-line ART. Socio-demographic and clinical data

were gathered, and laboratory tests were conducted to determine the estimated glomerular filtration rate (eGFR). Ultrasonography was performed to visualise the kidneys. **Results:** A total of 323 patients were enrolled (67.8% women), with a median age of 44 (interquartile range [IQR]: 39–51) years. Patients were on second-line ART for a median of 49 [IQR: 25–73] months, and 60% received ATV/r. Low eGFR (< 90 mL/min per 1.73 m2) was found in 22% of patients, proportionately higher among patients on ATV/r compared to those on a lopinavir/ritonavir (LPV/r) ($P < 0.05$). Nearly one-third (32.2%) of patients had a triad of renal calcinosis, renal calculi, and nephritis on ultrasonography. Patients using ATV/r had significantly smaller kidney volumes and greater proportions of renal calculi and nephritis compared to those on LPV/r ($P < 0.05$). **Conclusion:** Adults on second-line ART containing TDF were found to have a high prevalence of renal disease in the Tanzanian context. Predictors of kidney disease were older age, proteinuria, and ATV/r-based regimen as compared to LPV/r.

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424. Muhamed, M., Manji, M., Molloo, A., *et. al*… (2025). A Giant Cutaneous Horn of the Back with Initial Malignant Transformation: A Case Report. *Asian journal of case reports in surgery*, Vol. 8(2). Doi:10.9734/ajcrs/2025/v8i272.

Abstract

A cutaneous horn is conical projection of the skin and its soft tissue which is a result of a pathologic accumulation of material which is keratinized. There are numerous factors that are associated with cutaneous horns such as being male, increased age and lesion geometry. For people above the age of 50 years, the risk of malignant lesion is higher. A 21-year-old female presented to the clinic with a skin lesion on her back which had started 3 years ago. It began as a wound, which then progressed into a conical shaped swelling. On physical examination, it was 12 x 11 x 10 cm in size, hard, horny, fixed mass with irregular margins and heavy scarring located on the midline. X-ray and CT scan were done which showed no involvement of the spine. Wide surgical excision was done followed by skin grafting. The histology concluded that it was a cutaneous horn with early changes of verrucous carcinoma. She was then sent for radiotherapy. **Keywords:** Case report; cutaneous horn; surgery; split thickness skin graft.

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425. Muhihi, A., Njelekela, M. A., Anaeli, A., *et. al*… (2025). Enhancing Public Knowledge of Risk Factors and Warning Signs for Stroke and Heart Attack Through Home-Based Community Health Worker Interventions: A Cluster Randomized Trial. *International Journal of General Medicine*, Vol. 2025. Doi:10.2147/IJGM.S570125.

Abstract

Purpose: Enhancing community knowledge about risk factors and warning signs for stroke and heart attack is important for effective prevention and control. This study evaluated the effects of home-based health education and healthy lifestyle interventions delivered by community health workers (CHWs) on knowledge of risk factors and warning signs for stroke and heart attack. **Patients and Methods**: We conducted a 1:1 cluster-randomized trial in twelve villages in rural Morogoro, Tanzania. Participants in the intervention received monthly home-based health education and healthy lifestyle promotion from CHWs for 6 months, followed by bi-monthly

follow-up visits until 12 months. Participants in the control group followed the standard of care. Knowledge regarding risk factors and warning signs for stroke and heart attack was assessed through two independent cross-sectional surveys, one before and another after the intervention. The analyses were adjusted for baseline factors. **Results**: Both intervention and control groups experienced an increase in mean knowledge scores between baseline and evaluation survey, with a significant increase in the intervention group. Mean knowledge for risk factors increased by 4.0 (SD 2.7) in the intervention compared to 2.5 (SD 3.1) in the control group. That of warning signs increased by 3.1 (SD 2.4) in the intervention group compared to 2.4 (SD 2.8) in the control group. Overall, mean knowledge of risk factors and warning signs increased by 7.1 (SD 4.3) in the intervention group and by 4.9 (SD 5.3) in the control group. After adjusting for selected baseline characteristics, participants in the intervention group experienced a 2.1 greater increase in mean knowledge of risk factors and warning signs [difference in differences 2.1 (95% CI, 1.4 to 2.8)].**Conclusion**: CHWs' home-delivered health education and healthy lifestyle promotion interventions resulted in a significant enhancement in knowledge of risk factors and warning signs for stroke and heart attack. These findings provide insight into the potential of CHW-led interventions in the prevention and control of stroke and heart attacks in Tanzania. **Clinical Trial Registration**: Pan African Clinical Trial Registry (PACTR201801002959401). **Keywords**: community health workers, health education, knowledge, stroke, heart attack.

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426. Mujuni, D.P., Kilonzo, K.G., Sadiq, A.M., *et al*… (2025). Effects of Statin Therapy on Glycemic Control and Associated Factors Among Type 2 Diabetes Mellitus Patients in Northeastern Tanzania: A Retrospective Cohort Study. *Journal of Diabetes Research*, Vol. *2025*(1). Doi:10.1155/jdr/6626154.

Abstract

Introduction: Statins have been implicated in poor glycemic control among patients with diabetes mellitus (DM), prompting the US Food and Drug Administration (FDA) to update warning labels on all statins to reflect the risk of increased blood glucose levels. However, few studies from sub-Saharan Africa have assessed this concern. This study investigated the effects of statins on glycemic control among patients with Type 2 diabetes mellitus (T2DM) in Kilimanjaro, northeastern Tanzania. **Materials and Methods:** This was a hospital-based retrospective cohort study evaluating changes in glycated hemoglobin (HbA_{1c}) at 1–3, 7–12, and 19–24 months, as the primary outcome, comparing statin users and nonusers among T2DM patients attending DM clinic at Kilimanjaro Christian Medical Centre in Tanzania. Binomial regression models were fitted to calculate adjusted risk ratios for independent predictors of a ≥ 0.2% rise in HbA_{1c}, with statistical significance set at $p < 0.05$. **Results:** Out of 122 patients, 51 (41.8%) were on statin therapy. Among these, 46 (90.2%) were prescribed atorvastatin. Statin users had an increase of mean HbA_{1c} from 10.6% ± 2.7% at baseline compared to 11.6% ± 2.8% at 1–3 months ($p = 0.114$), followed by a decrease to 10.1% ± 2.2% at 7–12 months ($p = 1.0$), and 10.0% ± 2.5% at 19–24 months ($p = 1.0$). However, atorvastatin users ($n = 46$) had a significant increase of mean HbA_{1c} from 10.7% ± 2.8% at baseline compared to 11.9% ± 2.7% at 1–3 months ($p = 0.04$). In contrast, nonstatin users had a consistent and significant decrease in HbA_{1c} from 11.3% ± 2.8% at baseline compared to 9.7% ± 2.2% at 1–3 months ($p = 0.001$), to 9.7% ± 2.6% at 7–12 months

(p = 0.011), and to 9.3% ± 2.2% at 19–24 months (p = 0.001). **Conclusion:** Statin therapy among patients with T2DM was associated with short-lived worsening of glycemic control at 1–3 months posttherapy.

427. Mukendi, C.M., Shamuana, R.K., Tshkomba, H.M., *et al*… (2025). Favouring Factors and Germs Involved in Infection of Open Leg Bone Fractures at Bonzola Hospital in Mbujimayi: Descriptive Cross-Sectional Study. *International Journal of Health, Medicine and Nursing Practice*, Vol. 8(1). Doi:10.47941/ijhmnp. 2709.

Abstract

Purpose: Leg bone fractures are the most common skeletal fractures of the pelvic limb. This study aimed to determine the factors favoring infection of open leg bone fractures and the germs involved**. Methods:** This descriptive cross-sectional study was carried out at Bonzola Hospital in Mbuji Mayi, D.R. Congo, from January 1, 2018, to June 30, 2021, and included patients with open leg bone fractures. The association between a factor and the occurrence of infection was assessed using the correlation test (considered significant if $p \leq 0.05$). **Results:** Fracture site infection was found in 60.3% of open fractures, dominated by Staphylococcus aureus. Factors significantly associated with the occurrence of this infection were time from trauma to first aid, treatment received before hospital admission, type of treatment received before hospital admission (in a health center), prolonged time from trauma to hospital arrival, context of admission to Bonzola Hospital (emergency), Gustilo fracture type (II and III), and first bone treatment. Unique Contribution to Theory, Practice, and Policy: Open leg bone fractures are common. Infection occurs particularly in Gustilo and Anderson types 2 and 3. There are controllable factors associated with the occurrence of infection.

428. Muki, U., Shayo, G., Minja, E., *et al*… (2025). Prevalence and impact on quality of life of dermatological disorders and their associated factors among the elderly in urban areas of Dar es Salaam, Tanzania. *scientific reports*, Vol. 15(29019). Doi:10.1038/s41598-025-06166-8

Abstract

The global population of people aged 60 years or older (elderly) is increasing. Skin disorders are reported to be common in this population. In view of limited data available, this study determined the burden, pattern and impact on quality of life (QoL) of dermatological disorders among the elderly in Tanzania. This was a community-based cross-sectional study conducted from August to November 2021 in Ilala Municipality, Dar es Salaam. Participants were obtained through simple random sampling in multiple stages. Diagnoses were made through a clinical assessment initially performed by a dedicated dermato-venereology officer, and confirmed by a Dermatologist using digital photographs. Quality of Life was assessed using a validated Dermatology Quality of Life Index (DLQI) with scores ranging from 1 to 30. The wealth index was graded from class 1 (poor) to class 5 (rich). Data were analyzed through Chi-squared test, Poisson Logistic regression, and analysis of variance. A total of 694 elderlies were enrolled. The overall prevalence of dermatological disorders was 85.5% (593). The most frequent category of dermatological

disorders were skin infections and infestations (36.1%); eczemas (34.7%); papulosquamous eruptions (6.5%), and keratinization disorders (2.6%). Autoimmune disorders comprised 1.4%, while vascular disorders and tumors comprised 1.2% of all cases. A small proportion (1.7%) of the elderlies had ≥ 2 skin disorders. In multivariate analysis the wealth index was found to be associated with the presence of the dermatological disorder. There was a 61% impairment in QoL due to the dermatological disorders. Dermatological disorders among the elderly were common and were associated with the wealth index. They had a significant impact on the quality of life. Appropriate control measures to address dermatological disorders among the elderly are needed.

429. Muller, J.G., Dewalt, K., Goel, V., *et al*… (2025). Integrating mobility, travel survey, and malaria case data to understand drivers of malaria importation to Zanzibar, 2022–2023. *Malaria Journal*, Vol. 24(1). Doi: 10.1186/s12936-025-05605-1.

Abstract

Background: Zanzibar has achieved historic reductions in malaria incidence, but high connectivity to mainland Tanzania and imported cases remain a challenge to "last mile" malaria elimination. **Methods:** To understand factors driving malaria importation, prospective surveys were administered to patients at 94 health facilities across Zanzibar's main island, Unguja, from May 2022 to December 2023, and to travelers at the Zanzibar-bound ferry terminal in Dar es Salaam from August to December 2024. In addition, digital mobility data—Meta colocation and movement distribution—were analyzed to examine movement patterns between Unguja and mainland Tanzania. These data were integrated with rainfall data to explore the seasonality of human movement and travel-associated malaria risk. **Results:** Of 3,875 total malaria cases presenting to health facilities in Unguja, 1,172 reported travel to mainland Tanzania within the past 30 days (283/511 (55%) in 2022, 889/3,348 (27%) in 2023). Among these, travel to Tanga (20%), Dar es Salaam (20%), and Morogoro (15%) were most common. Children and females had higher odds of having malaria associated with travel to the mainland (aOR 3.2, 95% CI: 2.2–4.8 and aOR 1.5, 95% CI: 1.3–1.8, respectively, compared to those without mainland travel), while night watchmen and students with malaria were more likely to report travel within Zanzibar. Twenty-eight percent of travel-associated malaria cases reported primary residence on the mainland. However, Zanzibar residents who reported travel to mainland regions with high or moderate malaria risk during the dry season made up the highest proportion of travel-related malaria cases (n = 309, 32%). Meta movement distribution data shows that long-distance travel off Unguja decreases during the rainy seasons. In addition, imported cases correlated with rainfall at their mainland destination, rather than rainfall in Zanzibar. With different biases, data from both Meta colocation and ferry surveys approximated the proportional makeup of at-risk travel from different geographies relatively well. In particular, Meta colocation data highlighted travel between Tanga and Unguja, likely via private boats, not captured in the ferry data. **Conclusions:** Movement flows and seasonal rainfall patterns drive imported malaria in predictable ways that can be harnessed to target high-risk travellers for intervention.

430. Mung'ong'o, G.S., Msilanga, D., Sabuni, P.A., *et al*... (2025). Adherence to National Standard Treatment Guidelines in the Management of Hypertension and Associated

Factors Among Healthcare Providers at Public District Hospitals in Dar esSalaam, Tanzania. *medRxiv*. Doi:10.64898/2025.12.29.25343177.

Abstract

Background: Hypertension affects 15–25% of adults in Tanzania, with less than 30% of treated patients achieving adequate blood pressure control, leading to complications like stroke, heart failure, and renal disease. The National Standard Treatment Guidelines (NSTGs), 6th edition (2021), guide management, but healthcare provider adherence in district hospitals is unclear. **Materials and Methods:** A mixed-methods cross-sectional study was conducted at five public district hospitals in Dar Es Salaam, Tanzania. Quantitative data from 397 patient files assessed healthcare provider adherence in pharmacological treatment, complication monitoring, and comorbidity screening, categorized as complete, partial, or non-adherent. Modified Poisson regression was used to identify patient and provider factors. Qualitative data from 11 in-depth interviews were thematically analyzed for barriers, and facilitators to this adherence **Results:** Only 26.2% of patients received management with complete adherence to NSTGs, 27.7% showed partial adherence, and 46.1% were non-adherent. Higher healthcare provider adherence was associated with follow-up visits (aPR = 5.81; 95% CI: 3.12–10.81), Grade 1 hypertension (aPR = 3.87; 95% CI: 1.95–7.65), Grade 2 hypertension (aPR = 5.06; 95% CI: 2.64–9.71), presence of comorbidities (aPR = 2.35; 95% CI: 1.31–4.22), specialist providers (aPR = 7.00; 95% CI: 3.08–15.92), and provider experience of 5–10 years (aPR = 3.25; 95% CI: 1.52–6.97) and > 10 years (aPR = 3.91; 95% CI: 1.88–8.14). Barriers included outdated guidelines, absence of comorbidity-specific protocols, limited user input, weak monitoring, drug shortages, inadequate diagnostics, staffing gaps, and inadequate training, while facilitators included peer collaboration, mentorship, accessible guidelines, and continuing medical education. **Conclusion:** Low healthcare provider adherence to NSTGs contributes to poor hypertension control. Interventions like updated and inclusive guidelines, enhanced training, improved resource availability, and peer support are critical to improve adherence and patient outcomes.

431. Munroe, M., Chamba, C., Yonazi, M., *et al*… (2025). Low survival in younger adults with Acute Myeloid Leukaemia (AML) in Tanzania is linked to high disease burden and socioeconomic factors. *Plos one*. Doi: 10.1371/journal.pone.0332237.

Abstract

Background: Acute Myeloid Leukemia (AML) accounts for 20–25% of all leukemia diagnoses worldwide. According to Globoccan 2020, leukemia ranked the 15th most prevalent cancer with an estimated 474,519 new cases and 311,594 deaths annually. However, due to the scarcity of well-documented cancer registries, epidemiological and survival data of patients with AML are lacking in many African countries, including Tanzania. Therefore, the primary objective of this study was to determine the clinical features, laboratory characteristics, and survival outcomes of AML patients treated with different regimens in Tanzania. **Methods:** Data from all adult patients diagnosed with AML at Muhimbili National Hospital (MNH) between January 2018 and December 2023 were analyzed in this retrospective study. STATA version 16 was used for data analysis. The survival outcome was calculated using the Kaplan-Meier method. To evaluate the

statistical significance of the results, a p-value cut-off of 0.05 was used. The Cox proportional hazards model was used to identify predictors of survival and to estimate the effect of covariates on the hazard of death. Kruskal Wallis was used to compare the median values for laboratory results and pairwise comparison of median laboratory values was done using the Dunn Test. **Results:** A total of 245 patients were diagnosed with acute leukemia during the five-year period (2018−2023), of which 169 (68%) had AML. The mean age at diagnosis was 47.2 (SD ± 18.5) years. Majority of the patients were females (60.7%), and had de novo AML. Most of the patients presented with symptoms of anemia (98.2%) and fever (79.5%). The median survival time was 81 days with a one-year overall survival probability of 15.2%. Patients that resided outside of the Dar es Salaam region had a 74% increase hazard of mortality compared to those living within the Dar es Salaam region (aHR: 1.74, 95% CI: 1.15–2.64, p = 0.008). Patients receiving any form of chemotherapy had a 39% lower hazard of mortality compared to those who were on supportive treatment alone (aHR: 0.61, 95% CI: 0.40–0.93, p = 0.022). **Conclusion:** AML is the most common acute leukemia among adults in Tanzania, primarily affecting young females under 50 years. Resource constraints and limited treatment options result in poor outcomes, with a median survival of 81 days and a one-year overall survival of 15.2%.

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432. Munung, N.S., Osei-Tutu, L., Said, A.S., *et al*… (2025). Patients as Partners in Sickle Cell Disease Research in Africa: A Framework for Equitable Patient-Engaged Health Research. *The Patient-Patient-Centered Outcomes Research*, Vol.19. Doi:10.1007/s40271-025-00772-4.

Abstract

Background: Patient and public involvement (PPI) in health research is gaining global momentum through initiatives such as INVOLVE (UK), the Patient-Centred Outcomes Research Institute (USA), and the Strategy for Patient-Oriented Research (Canada). However, its implementation in Africa remains limited and lacks context-specific guidance. To address this gap, the Sickle Africa Data Coordinating Center supported the development of the Patients as Partners in Sickle Cell Disease Research (SCD-PAPIR) Framework to guide meaningful patient engagement and involvement in SCD research in Africa. **Methods** An iterative, participatory approach was adopted. The process involved the creation of a SCD PAPIR working group comprising SCD patient advocates in 14 African countries; 18 virtual working group meetings, one public webinar, and three in-person workshops. The framework was co-created through facilitated discussions reflecting on prior engagement in SCD research as a patient partner, and best practices for effective patient–researcher collaborations. Patient-only sessions and leadership roles were integrated to ensure safe spaces and to minimise power imbalances. **Results** The SCD-PAPIR Framework positions SCD patients and their caregivers as citizen researchers. Key to the framework is the principle of subsidiarity, which affirms the agency and experiential knowledge of patients while calling for epistemic humility from researchers. Its core pillars include valuing patient expertise, transparent communication, resource sharing, patient empowerment, collective learning, amplification of patient voice, continuous feedback, and shared benefits. Best practices emphasise two-way communication, addressing power asymmetries, co-learning and patient empowerment, co-ownership of outputs, and formalised PAPIR structures. **Conclusion** The SCD-PAPIR

Framework provides a contextually grounded model for patient-engaged research in Africa and contributes to efforts to decolonise health research by positioning patients as co-creators of knowledge, and not merely a data source. The effective implementation of the framework will require investment in institutionalising PAPIR in SCD research. Future work should focus on designing implementation toolkits, developing PPI training modules for researchers and patient advocates, and adapting the framework to other health conditions.

433. Murhula, G.B., Shadrack, M., Rehema, M.M., *et al.*.. (2025). Crocodile bite scalp avulsion and hand extensor tendons injury: A rare case reconstructed in a tertiary hospital in Tanzania. International *Journal of Surgery Case Reports*, 111721. Doi: 10.1016/j.ijscr.2025.111721.

Abstract

Introduction and importance: Crocodile bites on humans are rare but can lead to life-threatening injuries that most commonly affect the extremities and are often characterized by fractures and severe soft tissue avulsion. This case highlights a 20-year-old fisherman, victim of a crocodile bite, managed in a plastic surgery unit of a tertiary hospital in Tanzania. **Presentation of the case:** A 20-year-old male was attacked by a crocodile during a night fishing activity and was rescued by fellow fishermen. Conducted at a peripheral hospital, resuscitation, antibiotics therapy, tetanus prophylaxis, and debridement were initiated. He was then referred to a tertiary hospital where the assessment shown a 15 × 8 cm open debrided wound on the left fronto-parietal area and injuries on 4th and 5th extensor digitorum tendon and on the extensor digit minimi tendons repaired by the modified Kessler technique. Scalp defect was reconstructed by a right fronto-parietal transposition flap later. Functional and cosmetic outcomes were acceptable. **Clinical discussion:** Crocodile bite is dangerous and requires quicker reference to a health facility that should initiate resuscitation, antibiotics and tetanus toxoid. Optimal definitive management is done in a tertiary care center. Biomechanically, Modified Kessler is the most superior tendon repairs technique. The large size of scalp defect motivated its reconstruction by a transposition flap. Functional and cosmetic results were similar to other studies. **Conclusion:** Crocodile attack survivors suffer from large wounds with significant tissue destruction. To improve outcomes, early initiation of resuscitation, antibiotic therapy, and tetanus prophylaxis is essential. Definitive management, including soft tissue reconstruction, should be carried out at a tertiary hospital.

434. Murless-Collins, S., Ezeaka, V.C., Masoud, N. S. (2025). Born Too Soon: Care for small and sick newborns, evidence for investment and implementation. *Reproductive health*, Vol. 22(114). Doi:10.1186/s12978-025-02032.

Abstract

Progress: Over the past decade, the world has made policy progress for newborns including the first global Sustainable Development Goal (SDG) target 3.2 (< 12 neonatal deaths per 1000 live births) and Every Newborn Action Plan (ENAP). However, gaps remain for investment and action, especially for babies born too soon, too small, or who become sick. An estimated 20–30 million newborns have life-threatening conditions requiring hospital care each year. Annually,

approximately 2.3 million newborns die during the neonatal period, the majority being preterm. A further 1 million newborn survivors are estimated to have long-term disabilities. **Programmatic priorities:** to achieve SDG 3.2 by 2030, we need to accelerate four-fold. The shift to 80% of births in health facilities creates opportunities for impact, for both maternal and newborn care. Increased coverage and quality of high-impact newborn interventions is urgently needed to reach SDG targets. Most neonatal deaths and disabilities are preventable through an evidence-based package for small and sick newborn care (SSNC), with greatest impact seen in preterm babies—particularly through respiratory support and kangaroo mother care—while placing families at the centre of care. SSNC scale-up requires addressing ten core components, defined by WHO/UNICEF, based on a health systems approach: political commitment and leadership; financing; human resources; appropriate infrastructure; equipment and commodities; robust data systems and use of data for action; referral systems; linkage with high-quality maternal care; family and community involvement; and post-discharge follow-up. Specific focus is required for fragile conflict settings, accounting for 25% global births but 39% global newborn deaths. **Pivots:** More ambitious investment in high-quality, family-centred care for vulnerable newborns can give a high return of between US$ 9−12 for every US$ 1 invested. Accelerating implementation requires diverse stakeholders, including political leaders, bureaucratic and technical leadership in country, professional societies, civil society, the private sector and importantly from families and communities. Cross-country collaboration and strengthening capacities of low- and middle-income countries to address gaps in newborn care are essential for innovations to reach high-burden, conflict-affected, and marginalised populations. Integrating newborn care follow-up into wider child and family care systems is crucial to ensure newborns not only survive but also thrive.

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435. Mushi, B. P., Haddadi, S., Mrema, A., *et al*… (2025). Colorectal cancer care in Tanzania: an evaluation of clinical characteristics, treatment patterns and quality metrics at a national cancer referral hospital. *Ecancermedicalscience*, Vol. 19. Doi: 10.3332/ecancer.2025.1991

Abstract

Background: Colorectal cancer (CRC) is a leading cause of cancer morbidity and mortality in Tanzania. Non-metastatic CRC is a potentially curable disease that requires multidisciplinary management. This study aimed to evaluate clinicopathologic characteristics for CRC, treatment patterns and select quality metrics at Ocean Road Cancer Institute from 2014 to 2019, the time period immediately preceding the release of Tanzania's first National Cancer Treatment Guidelines in 2020. **Methods:** Quality metrics were selected a priori based upon existing international quality measures, the newly released Tanzania National Cancer Treatment Guidelines and key stakeholder input. Demographic, clinicopathologic and treatment data were abstracted from medical charts for all adult patients with newly diagnosed non-metastatic CRC presenting to Ocean Road Cancer Institute from 2014 to 2019. A clinician reviewed all case report forms for quality assurance. Patient characteristics, treatment patterns and quality metrics were examined using descriptive analyses. **Results:** Of 678 patients with CRC, 421 (62%) had non-metastatic disease. Of those with non-metastatic disease, 92 (22%) had colon cancer, 175 (42%) had rectal cancer and 154 (36%) were classified as CRC primary site not otherwise specified. Most

patients with colon cancer (n = 86, 93%) underwent surgical resection. Quality of adjuvant chemotherapy was high for colon cancer, with most patients receiving timely treatment (73% within 8 weeks of surgery) and most (81%) with stage III disease receiving appropriate treatment. Documentation in surgical pathology reports was poor, with only 5 of 78 (6%) documenting examination of >12 lymph nodes. Among rectal cancer patients, use of preoperative chemoradiation (7%) and perioperative chemotherapy (27%) was low for locally advanced disease. Overall, only 42 (24%) of patients with rectal cancer underwent surgery and 42 (24%) received no treatment. **Conclusion:** The majority of patients with non-metastatic colon cancer received high-quality care, whereas care delivery was less consistent among patients with rectal cancer. This suggests possible challenges in delivering complex, multidisciplinary care in low-resource settings. These findings will serve as a contemporary benchmark for future evaluations of the Tanzanian National Cancer Treatment Guidelines and their impact on CRC care and outcomes. ***Keywords:*** *colonic neoplasms, rectal neoplasms, quality indicators, resource-limited settings.*

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436. Mushi, R. (2025). "Application of Information and Communication Technologies (ICTs) for Learning at Muhimbili University of Health and Allied Sciences," 2025 IST-Africa Conference (IST-Africa), Nairobi, Kenya. Doi:10.23919/IST-Africa67297.2025.11060515.

Abstract

This study investigated the application of Information and Communication Technologies (ICTs) for learning at Muhimbili University of Health and Allied Sciences. The objective of the study was to investigate the utilization of ICTs for learning by undergraduate students at MUHAS and to point out challenges hindering their utilization. The target population for this study involved undergraduate students from the School of Pharmacy at MUHAS. A total of $\mathrm{N}=20$ students participated in the study. Using quantitative techniques, $\mathrm{N}=20$ (10 %) respondents were surveyed. The data were analyzed quantitatively using SPSS version 20. The findings revealed that there are insufficient ICT resources and inadequate ICT trainings. The study concludes that a low level of students' ICT competence, lack of technical support, insufficient ICT resources, and inadequate ICT training are the major challenges that hinder students from employing ICTs in the learning process. **Keywords:** Training; Conferences; Government; Medical services; Information and communication technology; Pharmaceuticals; Investment; Teaching Process; Outlearning Process; MUHAS; Tanzania.

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437. Mushi, R., Aurora, T., Luhulla, K., *et. al*… (2025). Prevalence and factors associated with acute transfusion reactions among patients receiving blood transfusions in regional referral hospitals in dar es salaam, Tanzania. *Blood,* Vol. 146 (3141). Doi:10.1182/blood-2025-3141.

Abstract

Background: Blood transfusion is a lifesaving procedure, essential in the management of various medical and surgical conditions including severe anemia, infection, bleeding and malignancies. Despite its usefulness, it may be associated with adverse reactions resulting from various pathophysiology. Acute transfusion reactions (ATR) are adverse events occurring within 24 hours post-transfusion. These reactions range from mild to severe and remain a major safety concern for both patients and providers. Due to limited resources for preparation of blood products, most regional hospitals in the country of Tanzania transfuse whole blood. This poses an increased risk for acute transfusion reactions due to unnecessary transfusion of plasma and other components. There is a significant paucity of data on transfusion reactions in Tanzania, hence this study was conducted to determine the prevalence of acute transfusion reactions and identify the associated risk factors. **Objective:** To determine the prevalence and factors associated with ATRs among patients receiving blood transfusions in regional referral hospitals in Dar es Salaam, Tanzania. **Methods:** A cross-sectional study was conducted from October 2024 to March 2025 in three regional referral hospitals which are Amana, Mwananyamala, and Temeke hospitals in Dar es Salaam. A total of 151 patients receiving whole blood for severe anemia were enrolled. Transfusion data, which included patient demographics, blood product and dose, and transfusion indication were collected using the Tanzania Ministry of Health transfusion monitoring forms. Immunohematology tests including ABO grouping, compatibility testing, and direct antiglobulin test (DAT) were performed in all patients with ATRs. Statistical analysis using STATA v25 involved bivariate and multivariable Poisson regression was utilized to determine factors associated with ATRs, expressed as adjusted prevalence ratios (aPRs) with 95% confidence intervals. **Results:** A total of 151 participants were included in the study. Females accounted for 53.6% of the total population. The median age of all participants was 30 years (IQR: 21–41), with the majority aged 18–39, (58.3%). Those who were aged below 18 and above 59 years accounted for 13.2%, and 8.6%, respectively. 51 (33.8%) patients developed ATRs. Underlying diagnoses of those with ATR included gastrointestinal bleeding/renal disease (29.6%), hematological disorders (41.5%), infection (39%), pregnancy (16%), and trauma (20%). Among those who developed ATR, Amana hospital had 20 patients (39.2%), Mwananyamala hospital with 16 patients (31.4%) and Temeke hospital had 15 patients (29.4%). The most common reactions were febrile non-hemolytic transfusion reactions (43.1%), followed by allergic reactions (31.4%), post-transfusion purpura (9.8%), anaphylaxis (7.8%), acute hemolytic reactions (3.9%), and transfusion-associated circulatory overload (3.9%). DAT was positive in 24 (15.7%) of ATR cases but the subtype of antibody implicated was not determined. Multivariable analysis showed significantly lower ATR risk among patients with obstetric and gynecological diagnoses (aPR = 0.39; 95% CI: 0.25–0.60; $p < 0.001$). In contrast, blood groups AB (aPR = 2.84; $p = 0.015$), B (aPR = 2.16; $p = 0.043$), and O (aPR = 2.53; $p < 0.001$) were associated with higher ATR risk compared to group A. No significant associations were found with age, sex, transfusion dose, or health facility. **Conclusion:** A high prevalence of ATRs was observed, predominantly febrile and allergic reaction, likely exacerbated by the exclusive use of non-leukoreduced whole blood. Blood group and clinical diagnosis were significant predictors of ATRs, while traditional demographic variables were not. The detection of positive DAT in some cases suggests alloimmune mechanisms not routinely addressed in current transfusion practice. From this study, we believe that four mechanisms may lead to a decrease in

ATR: transitioning from whole blood transfusion to component therapy, use of pre-storage leukoreduction, introduction of routine antibody screening and extended red cell phenotyping, and integration of hemovigilance systems across all transfusion sites. These strategies are critical to reducing preventable transfusion-related morbidity in resource-limited settings and set us up for future studies in the field.

438. Mushi, R., Lwoga, E.T. (2025). A Heuristic Evaluation of Usability in the Hospital Information System Interface for the Fistula Programme. *Journal of Hospital Librarianship*, Vol. 25(4). Doi:10.1080/15323269.2025.2569308.

ABSTRACT

This study conducts a heuristic evaluation of the usability of the Hospital Information System (HIS) interface for the Fistula Programme in a Tanzanian hospital. Utilizing Nielsen's 13 heuristics, the evaluation identifies critical usability issues affecting user experience, particularly in areas like privacy, flexibility, and documentation. Findings indicate that while health workers generally perceive the system as user-friendly, significant challenges remain that could hinder effective use. The research underscores the importance of involving users in the development process to enhance interface usability and address identified concerns, ultimately aiming to improve the system's efficiency and effectiveness in supporting patient care. ***Keywords**: Fistula Programme, Heuristic evaluation, Hospital Information System, interface, usability*

439. Mushi, T., Vuhahula, E., Malango, A., *et al*... (2025). 1162 Relationship Between BRAF V600E Expression and Clinico-pathological Characteristics of Ameloblastoma in Tanzanian Patients. *Laboratory Investigation*, Vol. 105(3)

Abstract

Background: Ameloblastoma is a benign but locally aggressive tumor that arises from the odontogenic epithelium. It accounts for about 3% of all head and neck tumors and up to 58% of odontogenic tumors globally. The condition can affect individuals of any age with no sex preference. Patients often present with symptoms like swelling, tooth loss, and facial deformities. The main treatment is surgical resection, which can result in significant complications if reconstructive surgery isn't done. Recent studies have uncovered several driver mutations, particularly the BRAF V600E mutation, sparking interest in targeted therapies. Accurate diagnosis of this mutation is crucial for effective treatment, yet information on its frequency in

ameloblastoma is scarce in Africa, particularly in Eastern Africa and Tanzania. **Design:** A retrospective descriptive cross-sectional study was conducted, analyzing patient records from January 2017 to December 2022. Cases were selected based on the availability of clinical information and tissue blocks suitable for immunohistochemistry (IHC). Histological evaluations confirmed the diagnosis, and IHC staining was performed using a specific antibody for BRAF V600E. Statistical analyses were conducted to explore relationships between various demographic and clinical variables, using Fisher's exact test and Chi-square tests with a significance level set at $p \leq 0.05$. **Results:** The study included 51 patients, with 27 females (53%) and 24 males (47%). The mean age was 31±12 years. Most cases (48/51, 94%) were in the mandible. The conventional type accounted for 41 (80%) of all cases. Overall, BRAF V600E expression was observed in 39 (76%) of cases. Conventional type ameloblastoma was significantly more likely to express BRAF V600E than the unicystic type ($p=0.04$). Four patients presented with recurrence and all were BRAF V600E positive, while none of the BRAF V600E negative tumors showed recurrence. There was no statistically significant difference observed on BRAF V600E expression across sex, age, recurrence, or anatomical location.

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440. Mushi, V.P., Luoga, P., Nyangi, E., *et al*... (2025). Determinants of uptake of deworming medication during pregnancy in Tanzania: insights from the 2022 demographic and health survey. *Journal of Health, Population and Nutrition*, Vol. 44(1). Doi: 10.1186/s41043-025-01116-6.

Abstract

Background: Anemia during pregnancy increases delivery risks, with untreated parasitic infections being a major cause. In Tanzania, evidence on deworming uptake among pregnant women aged 15–49 is limited. This study assessed national uptake and determinants of deworming medication use in this group. **Methods:** We analyzed secondary data from the 2022 Tanzania Demographic and Health Survey (TDHS-2022), using the Pregnancy Outcome and Care for Pregnancies (NR) file. The study population consisted of pregnant women aged 15–49 years who had a live birth or stillbirth in the three years preceding the survey. A total of 4,401 women were included (unweighted n = 4,387; weighted n = 4,401). The outcome was uptake of deworming medication during pregnancy, defined using DHS variable m60 (yes = 1, no = 0). Survey-adjusted logistic regression was used to identify determinants, and results are presented as adjusted odds ratios (aORs) with 95% confidence intervals (CIs). **Results:** The uptake of deworming medication among pregnant women in Tanzania was 61.9% (95%CI: 59.7–64.0). Multivariable logistic regression analysis revealed several significant determinants. Women aged 25–34 years (aOR: 1.36, 95%CI: 1.13–1.63), residing in the Southern zone (aOR: 1.62, 95%CI: 1.26–2.09), currently employed (aOR: 1.26, 95%CI: 1.08–1.49), and those from wealthier households (aOR: 1.38, 95%CI: 1.05–1.82) had higher odds of taking deworming medication. Insurance coverage (aOR: 1.58, 95%CI: 1.00–2.50), having seven or more children under five years (aOR: 2.80, 95%CI: 1.26–6.23), attending four or more ANC visits (aOR: 1.36, 95%CI: 1.05–1.77), and accessing mass media at least once a week (aOR: 1.40, 95%CI: 1.15–1.72) were also associated with increased uptake. Conversely, women in rural areas had lower odds of taking deworming medication (aOR: 0.75, 95%CI: 0.59–0.95) compared to their urban counterparts. **Conclusions:** In Tanzania,

deworming medication uptake among pregnant women remains suboptimal. Determinants of higher uptake included age 25–34 years, southern residence, employment, wealth, insurance coverage, high parity, attending at least four ANC visits, and regular media exposure, while rural residence was

441. Mushy, S.E., Lukumay, G.G., Massae, A.F., *et al*… (2025). Knowledge of Mandatory Reporting Laws and Recording of Clients' Abuse Data: Effects of a Sexual Health Curriculum Training for Health Students in Tanzania. *Journal of child sexual abuse*, Vol. 34(1)

Abstract

Tanzania mandated reporting laws aim to identify and address child abuse, yet healthcare students' awareness and reporting are limited. This study assessed training's impact on their knowledge of reporting laws and handling confidential child abuse data. The study involved 412 medical and nursing students in a randomized controlled trial (RCT), with 206 participants receiving sexual health training and a waitlist control group of equal size receiving no intervention. Baseline and 3-month follow-up assessments evaluated knowledge of mandatory reporting laws and recording practices. At the 3-month follow-up, the control group showed minimal knowledge improvement (+7.5% for item 1, −6% for item 2), whereas the intervention group showed significant gains (23.7% for item 1, 0.7% for item 2). Additionally, notable disparity in total scores for reporting and recording between the groups emerged from baseline to follow-up (t = -3.682, p < .001, Cohen's d = 0.365). The intervention group (M = 0.527, SD = 1.630) had a larger mean difference score than the control group (M = -0.044, SD = 1.499). Therefore, the training significantly improved students' knowledge of mandatory reporting laws and the recording of clients' confidential information.

442. Mussa, F. M., Joachim, A., Moshiro, R, *et al*... (2025). A study protocol for neonatal sepsis and gut microbiomics among preterm infants admitted at Muhimbili National Hospital, Tanzania. *Plos one*, Vol. *20*(6). Doi: 10.1371/journal.pone.0325099.

Abstract

Background: Neonatal mortality remains high in many low- and middle-income countries (LMICs), with neonatal sepsis and antimicrobial resistance (AMR) posing significant threats to newborns, particularly in sub-Saharan Africa (SSA). Tanzania is among the countries with the highest neonatal mortality rates, with sepsis being a major contributor. Gut dysbiosis has been identified as a risk factor for neonatal sepsis in high-income countries, due to factors like abundance of pathogenic bacteria, decrease in microbiome diversity, intestinal barrier defects and bacterial translocation. Understanding gut dysbiosis in the local setting and its role in sepsis development may offer new prevention strategies, such as probiotics for high-risk preterm infants.
Objectives: This prospective neonatal cohort, established at Muhimbili National Hospital (MNH) in Dar es Salaam, Tanzania, aims to analyze the gut microbiome of preterm infants and explore associations with neonatal late-onset sepsis (LOS). Additionally, data on bacterial pathogens of bloodstream infections and AMR prevalence will be identified. Secondary endpoints include

clinical LOS, sepsis-related death, death from any cause, and hospital discharge outcomes. **Methods:** Eligible preterm neonates (28 + 0 to <34 weeks of gestational age, birth weight ≥ 1000g) will be recruited with maternal consent. Socio-demographic and clinical data, microbiological details of blood pathogens, and a set of fresh frozen fecal samples during the 28 days observation period will be collected. The study targets a sample size of 1350 participants and we expect 72–135 culture-proven LOS during a study period of 18 months. Fecal samples will undergo next-generation sequencing (NGS) to analyze microbial community functions in comparison to matched controls. **Discussion:** This collaborative study between universities in Tanzania and Germany, aims to analyze the neonatal microbiome in relation to sepsis development and AMR of blood culture isolates to enhance neonatal sepsis care, improve diagnostics and treatment. The project will offer insights into potential therapeutic strategies for the future, promote academic exchange, capacity building and research on African microbiomes.

443. Mutagwaba, M.C., Mponda, B., Bihagala, J.M. (2025). Chronic neglected obturator hip dislocation: A case of delayed presentation and management at 8 months. *Trauma Case Reports,* Vol. 60. Doi: 10.1016/j.tcr.2025.101256.

Abstract

Hip obturator dislocations are among the most common presentations in high-energy trauma. In this paper, we report a rare case of an 8-month neglected obturator hip dislocation in a 35-year-old male who presented at our facility. Initially, the patient sought treatment from a traditional healer for 4 months with no success. After examination and investigations, open reduction and internal fixation were performed at our facility, with gradual postoperative rehabilitation. The patient experienced improved range of motion and pain relief at six months follow-up, though some functional limitations persisted. This case emphasises the importance of timely diagnosis and intervention in hip dislocations to prevent long-term complications associated with delayed treatment.

444. Mutatina, A.W., Lomnyak, E.M., Bizimana, T., *et al*… (2025). A Point Prevalence Survey of Antibiotic Use Patterns at Tanga Regional Referral Hospital in Tanzania. *Antimicrobial Stewardship & Healthcare Epidemiology,* Vol. 5(1). Doi:10.1017/ash.2025.10199.

Abstract

Objective: Antimicrobial resistance (AMR) is a major global health threat, driven in part by inappropriate antibiotic use. This study assessed the prevalence, patterns, and determinants of antibiotic prescription among inpatients at Tanga Regional Referral Hospital (RRH), Tanzania, using the World Health Organization (WHO) Point Prevalence Survey (PPS) methodology. **Design:** A cross-sectional PPS was conducted using the WHO tool. Descriptive statistics summarized prescribing patterns, and logistic regression identified factors associated with antibiotic use. **Setting:** Tanga RRH in Tanzania among hospitalized patients in April 2023. **Results:** Among 205 inpatients (60.5% female), 77.6% (n = 159) received ≥1 antibiotic, with a mean of 2.1 agents per patient. Metronidazole (27.7%) and ceftriaxone (17.6%) were the most

frequently prescribed antibiotics. Only 2.4% of prescriptions were supported by antimicrobial susceptibility testing. In multivariate analysis, the absence of a peripheral vascular catheter was independently associated with reduced odds of antibiotic use (aOR 0.16, 95% CI: 0.06–0.43). Although 89% of prescriptions followed the Tanzanian Standard Treatment Guidelines, prescribing patterns diverged from WHO stewardship targets: only 53.8% of antibiotics were from the Access group (below the ≥60% recommended threshold). In comparison, 44.4% belonged to the broader-spectrum Watch group. **Conclusion:** Antibiotic use in Tanga RRH was high, with limited microbiological guidance and heavy reliance on broad-spectrum Watch antibiotics, highlighting stewardship gaps. Strengthening antimicrobial stewardship and expanding diagnostic capacity are urgently needed to optimize antibiotic use and curb AMR in resource-limited settings.

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445. Muwonge, H., Lubega, S., Zavuga, R., *et al*… (2025). Ugandan athletes' and coaches' experiences and perceptions on the effectiveness and legitimacy of the doping control process. *BMC Sports Science, Medicine and Rehabilitation*, Vol. 17(1). Doi:10.1186/s13102-025-01206-2.

Abstract

Background: Doping undermines competitive integrity and endangers athletes' health, with performance-enhancing substances linked to severe adverse effects. While the World Anti-Doping Agency (WADA) provides standardized testing protocols, developing countries such as Uganda face significant enforcement challenges. This study aimed to explore Ugandan athletes' and coaches' experiences and perceptions of the doping control process, emphasizing its effectiveness and legitimacy. **Methods:** A mixed-methods cross-sectional study was conducted, including a survey of 346 Ugandan athletes using a modified WADA questionnaire to evaluate perceptions on test accuracy, detection likelihood, and enforcement seriousness. Additionally, 196 coaches participated in 12 focus group discussions (FGDs) across four regions of Uganda to provide deeper insights. **Results**: Athlete participants had a mean age of 24 years (± 6); 82% were male, and only 19% had ever been tested for doping. 56% believed doping tests were more likely during competitions compared to 39% for out-of-competition testing, with 55% confident they could evade detection. Approximately half considered anti-doping procedures fair and transparent. Only 17% felt that "NADO-Uganda" treated athletes equally, with 58% uncertain, indicating limited knowledge rather than a definitive view of unfairness. Coach participants, with a mean age of 32 years (± 14), reinforced the quantitative findings, emphasizing infrequent doping tests and persistent concerns about procedural transparency and fairness, which undermined trust and perceived legitimacy. **Conclusion:** There are significant gaps in doping control in Uganda, where infrequent testing and ambivalence regarding enforcement transparency diminish anti-doping measures. Strengthening Uganda's anti-doping framework requires increased testing frequency, culturally tailored education to bridge knowledge gaps, and enhanced procedural transparency and consistency. These measures are essential to establish a credible anti-doping system that supports clean sport values despite resource constraints.

446. Mvalo, T., Dhaded, S.M., Manji, K.P., *et al*... (2025). Mortality, morbidity, and growth among moderately low birthweight infants in India, Malawi, and Tanzania. *BMC Pediatrics*, Vol. 25(1). Doi:10.1016/S0140-6736(23)00721-3.

Abstract

Background: Despite notable global reductions in infant and under-five mortality over the last two decades, about half of the remaining neonatal deaths occur among low birth weight (LBW) infants. We conducted a prospective study to characterize the mortality risk and morbidity of moderately LBW (MLBW; 1500–2499 g birth weight) infants during the first year of life in India, Malawi, and Tanzania. **Methods:** The multi-site Low Birthweight Infant Feeding Exploration (LIFE) study was conducted from September 2019 to July 2021 and followed a cohort of MLBW infants from India, Malawi, and Tanzania from birth to 52 weeks of age. At follow-up visits conducted at 1, 2, 4, 6, 10, 14, 18, 26, 39, and 52 weeks of age, mothers/caregivers were asked to recall the presence of diarrhea, fever, acute respiratory infections, and convulsions during the past week, and infant weight and length were assessed. Generalized estimating equations (GEE) were used to evaluate study site and sociodemographic risk factors for infant morbidity and mortality, and also to assess the relationship between infant morbidity and anthropometric measures. **Results:** A total of 1,121 MLBW infants were included in the analysis, and 47 (4.2%) deaths were recorded by the age of 12 months. Preterm-appropriate-for-gestational age infants had approximately twice the risk of infant death compared to term-small-for-gestational age infants (RR: 2.09; 95% CI: 1.08, 4.05). Period prevalence of diarrhea and fever increased with infant age and differed by study site (p-values < 0.05). In time-varying analyses, reported diarrhea during the past week was associated with lower length-for-age z-score (LAZ) (mean difference (MD): -0.20; 95% CI: -0.31, -0.09), weight-for-age z-score (WAZ) (MD: -0.25; 95% CI: -0.35, -0.16), and weight-for-length z-score (WLZ) (MD: -0.24; 95% CI: -0.36, -0.12), while fever was associated with lower WAZ (MD: -0.14; 95% CI: -0.21, -0.06), and WLZ (MD: -0.17; 95% CI: -0.26, -0.08) but not LAZ at the concurrent study visit. **Conclusion:** The risk of death during the first year of life is high for MLBW, but differs by the contribution of prematurity and size-for-gestational age. Interventions that reduce the incidence of diarrhea and fever may improve the growth of MLBW infants.

447. Mvungi, H.C., Mbelele, P.M., Msaji, K.S., *et. al*… (2025). Comparative Treatment Outcomes of Shorter Regimen in Modified All Oral Regimen with Injectable in Patients Treated for Rifampicin-resistant/Multidrug-resistant Tuberculosis in Tanzania. *The International Journal of Mycobacteriology*, Vol. 14 (4). Doi: 10.4103/ijmy.ijmy_98_25.

Abstract

Background: Drug-resistant tuberculosis (TB), especially rifampicin-resistant/multidrug-resistant TB (RR/MDR-TB), remains difficult to treat due to toxic aminoglycosides. The World Health Organization recommended all-oral bedaquiline-based regimens, but evidence comparing their effectiveness to injectable-containing regimens is limited. This study evaluated treatment success between both approaches. Methods: This was a retrospective study, which included 114 adults aged 18 years and above with RR/MDR-TB treated at Kibong'oto Infectious Diseases Hospital with either a 9–11-month injectable-containing regimen from 2018 to 2019 or a modified all-oral

bedaquiline regimen from June 2020 to May 2021. Patients were followed monthly for smear/culture conversion and clinical outcomes up to 12 months posttreatment. Analysis was performed using SPSS version 25. Results: Of 114 patients, 71 (62.3%) received an all-oral bedaquiline-containing regimen. Overall, 80 (70.2%) patients were male, with a median age of 37 years (interquartile range: 29–48); 27 (23.9%) patients were human immunodeficiency virus infected, and 37 (22.5%) had prior TB treatment. Culture conversion at month 2 occurred in all 43 patients on injectable regimens, compared to 63 (90%) patients on all-oral regimens (P = 0.03). Treatment success was higher in the all-oral group at 63 (94.4%), compared to 33 (76.7%) in the injectable group (P = 0.001). Mortality was 7 (14.0%) in the injectable group and 4 (5.6%) in the all-oral group (P = 0.004). Conclusion: All-oral bedaquiline regimens demonstrated higher treatment success and lower 12-month posttreatment mortality, while injectable regimens had faster culture conversion at month 2, but poorer overall outcomes, supporting the use of all-oral treatment.

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448. Mvungi, H.C., Mbelele, P.M., Msaji, K.S., *et. al.*… (2025). Outcomes of Shorter Regimen in Modified All Oral Regimen with Injectable in Patients Treated for Rifampicin-resistant/Multidrug-resistant Tuberculosis in Tanzania. *The International Journal of Mycobacteriology*, Vol. 14 (4). Doi: 10.4103/ijmy.ijmy_98_25.

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449. Mwaisengela, S.M., Materu, P.A., German, C.J., *et al.*.. (2025). Contribution of Human Resources for Health competence and skill mix on compliance with healthcare quality

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standards among Primary Healthcare Facilities in Tanzania: evidence from dispensaries. ***Discover Public Health*****, Vol.** ***22*****(1). Doi:10.1186/s12982-025-00538-1.**

Abstract

Background: Globally, it is known that, there is a close correlation between the concentration of qualified Human Resources for Health (HRH) and key health outcomes. Inadequate numbers with poor skill mix compromise health system functioning that negatively affect delivery of quality healthcare services. **Objective:** This study aims to study the effect of HRH skills and competence mix on the compliance with healthcare quality standards (HCQS) among dispensaries in Tanzania. **Methods:** This is a quantitative secondary data analysis using the Star Rating Assessment (SRA) data collected in the fiscal year 2017/2018 involving 4239 dispensaries majority of which were rural located (81.2%) and public owned (83.6%). Compliance with HCQS was measured by considering service delivery areas of SRA. HRH availability that estimated skill mix status were deduced by considering its recommended number by staffing levels guidelines. Proportions of skill mix status and compliance with HCQS were compared by chi square test while Prevalence Ratios were estimated by Multivariable Poisson Regression with 95% Confidence Interval. **Results:** On average, 36.8% of dispensaries had skill mix. Results indicated that, the higher the skill mix, the more the compliance with HCQS. Dispensaries with optimal skill mix (APR = 2.68, P < 0.001, 95% C.I = 2.00–3.59), Desirable skill mix (APR = 2.41, P < 0.001, 95% C.I = 2.03–2.86) and poor skill mix status (APR = 1.72, P < 0.001, 95% C.I = 1.48–1.99) were more likely to comply with HCQS compared to dispensaries with no skills mix at all. **Conclusions:** This study demonstrates the critical role that HRH skill mix has in ensuring adherence to HCQS. The observed challenge of HRH availability and hence skill mix should be worked on. Given that, over two-thirds of Tanzanians who reside in rural areas rely on dispensaries for accessing healthcare services, to achieve equity in healthcare accessibility, deliberate measures including increasing recruitment budgets and equitable distribution of available HRH should be taken to address the challenge.

450. Mwaisengela, S.M., Materu, P.A., German, C.J, ***et al.*****.. (2025). Direct health facility financing and its influence on quality compliance in primary healthcare: evidence from Tanzania.** ***Health Research Policy and Systems*****, Vol.** ***23*****(1). Doi:10.1186/s12961-025-01361-5.**

Abstract

Background: Sickle cell disease (SCD) is associated with high physical and psychosocial burden among patients and their families. Hydroxyurea (HU) improves health-related quality of life by preventing SCD complications. Despite its availability, HU is underutilised in Tanzania. Perceived self-efficacy for appropriate medication uses influences medication usage among individuals with chronic illnesses. We studied factors associated with caregivers perceived self-efficacy for appropriate use of HU and its association with HU usage among children with SCD in Dar-es-Salaam. **Methods**: We conducted a cross-sectional study from May to August 2023. We enrolled 374 caregivers of children with SCD from two regional and two national hospitals. We adapted the self-efficacy for appropriate medication use scale, a multidimensional perceived social support

scale, and a patient health questionnaire for assessment of self-efficacy, social support, and depressive symptoms, respectively. **Results**: Three-quarters of caregivers had high perceived self-efficacy scores for medication use. Attending national hospitals, high social support, and absence of depressive symptoms were positively associated with perceived self-efficacy (adjusted beta coefficient aβ 2.3, 95% CI 0.5–4.2; aβ 9, 95% CI 7.1–10.9; and aβ 5.3, 95% CI 2.8–7.8, respectively). Caregivers with high self-efficacy were 5.3 times more likely to give HU to their children compared with those with low self-efficacy (incidence rate ratio 5.3, 95% CI 3.3–8.3). **Conclusions**: Hospital levels and psychosocial factors influence caregivers perceived self-efficacy for appropriate HU use. We recommend targeted interventions to enhance psychosocial support among caregivers to increase caregivers perceived self-efficacy and HU utilization among children with SCD in Tanzania.**Keywords**: social support; depressive symptoms; self-efficacy for appropriate medication use; hydroxyurea; sickle cell disease.

451. Mwaiswelo, R.O., Mmbando, B.P., Chacky, F., *et al*… (2025). Prevalence of resistance markers of artemisinin, partner drugs, and sulfadoxine-pyrimethamine in Nanyumbu and Masasi Districts, Tanzania between 2020 and 2021. *Antimicrobial Agents and Chemotherapy*, Vol. 69(10). Doi:10.1128/aac.01751-24.

Abstract

Regular monitoring of the emergence and spread of Plasmodium falciparum markers of resistance against artemisinin, partner drugs, sulfadoxine, and pyrimethamine is important for the treatment and prevention of malaria in Tanzania. Blood samples were collected from febrile and non-febrile children aged 3 to 59 months in Masasi and Nanyumbu Districts between 2020 and 2021. The samples were subjected to molecular analysis for markers of artemisinin, partner drugs, sulfadoxine, and pyrimethamine resistance, including Plasmodium falciparum kelch (Pfk) 13 gene, P. falciparum chloroquine resistance transporter gene (Pfcrt), P. falciparum multidrug resistance gene (Pfmdr) 1, P. falciparum dihydrofolate reductase (Pfdhfr), and P. falciparum dihydropteroate synthase (Pfdhps). A total of 531 blood samples were analyzed. None of the P. falciparum isolates analyzed for Pfk13 carried any of the validated markers of artemisinin resistance. Pfcrt CVMNK wild-type haplotype occurred in 88.9% (271/305) of the parasites, and the mutant CVIET haplotype occurred only in 0.7% (2/305). Conversely, the majority of the parasites (24.2% [48/198]) were carrying Pfmdr1 NFD haplotype, followed by the wild-type haplotype NYD (19.1% (39/198), and the rest were mixed infections. Quintuple mutation IRNI-SGEAA occurred in 54.4% (62/114), and sextuple mutation IRNI-FAKGS occurred only in 0.9% (1/114) of the parasites. No parasite carried any validated markers of artemisinin resistance; however, the prevalence of Pfcrt and Pfmdr1 resistance markers against the partner drugs reached saturation. Sextuple Pfdhfr-Pfdhps mutations occurred only in one patient; therefore, SP remains efficacious for IPTp in the Districts.

452. Mwakalasya, W.N., Mamuya, S.H., Manji, K., *et al*… (2025). 57 Prenatal pesticide exposure impairs social-emotional and executive function performance in children aged 4-6 years. *Occupational environment medicine,* Vol. 82(1). Doi:10.1136/oemed-2024-EPICOH.

Abstract

Objective: Some pesticides are neurotoxic and may influence the neurodevelopment of children born to mothers exposed to these pesticides during pregnancy. However, the epidemiological evidence about this relationship is conflicting, and few studies have been performed in African countries. This study examined the impact of early-life exposure to pesticides on the neurodevelopment of children aged 4-6 years from eastern and southern Tanzania. **Material and Methods:** This cross-sectional, descriptive, and analytical study involved women working in small-scale horticulture and their children from Mbeya, Morogoro and Pwani regions. Pesticide exposure was assessed by interviewing mothers about pesticide-related tasks they performed during pregnancy using a questionnaire. Children's neurodevelopment was tested using the International Development and Early Learning Assessment tool. Neurodevelopment scores were categorized as struggling (<25%), emerging (25-74%), and mastering (≥75%). Multinomial logistic regression examined the relationship between pesticide exposure and neurodevelopment score categories. **Results:** Data was collected from 432 mother-child pairs, comprising 53% boys and 47% girls. The children were aged 4 years (24.6%), 5 years (31.1%), and 6 years (44.3%). Most children (87.8%) had normal weight-for-height Z scores. Mean neurodevelopment scores varied, with the lowest in emergent literacy (45.7±20.5) and the highest in fine and gross motor (67.1±18.3) domains, totalling 57.4±18.0 for all domains. Multinomial logistic regression analysis revealed that children of mothers who reported engaging in weeding, washing clothes and equipment used for pesticide spray or eating horticultural crops within 24 hours of pesticide spraying during pregnancy had a significantly higher likelihood ($p<0.05$) of struggling in social-emotional and executive function tests. **Conclusions:** Certain maternal horticultural practices during pregnancy are associated with lower social-emotional and executive function scores in children aged 4-6 years. These findings underscore the need for robust studies to further explain this relationship and inform effective interventions.

453. Mwakalasya, W.N., Mamuya, S.H., Manji, K., *et. al*… (2025). Neurodevelopment in children born to women *exposed* to pesticides during pregnancy. *Plos one,* Vol. 20(12). Doi: 10.1371/journal.pone.0326007.

Abstract

The global rise in pesticide useparticularly across Africa, raises concerns about maternal occupational exposure during pregnancy and its potential impact on child neurodevelopment. This study examined associations between self-reported maternal pesticide exposure during pregnancy and neurodevelopmental outcomes in children aged 4–6 years. A cross-sectional design was implemented, comprising 432 mother–child pairs from three horticulture-intensive regions in Tanzania. Maternal exposure was assessed through structured interviews, focusing on activities during pregnancy such as pesticide spraying, weeding, and handling contaminated clothing. Children's neurodevelopment was evaluated using the International Development and Early Learning Assessment (IDELA), which measures motor skills, literacy, numeracy, social–emotional development, and executive function. Linear regression analyses revealed that children of mothers who reported pesticide spraying during pregnancy scored significantly lower in social–emotional ($\beta = -6.813$, 95% CI: –11.53 to –2.096, $p = 0.005$) and executive function ($\beta = -9.317$, 95% CI: –16.007 to –2.627, $p = 0.006$) domains. Overall, children achieved the highest mean scores in fine and gross motor skills (62.11 ± 19.3) and the lowest in executive function (43.97 ± 24.3). Age-related differences were also observed, with six-year-olds consistently outperforming younger children across all developmental domains. These findings suggest an association between maternal pesticide exposure during pregnancy and adverse neurodevelopmental outcomes in offspring. Given that exposure data were self-reported, results should be interpreted cautiously. Nevertheless, the study underscores the urgent need for comprehensive risk assessments incorporating objective exposure measurements, particularly in horticultural settings where women of reproductive age represent a substantial proportion of the workforce.

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454. Mwakalasya, W.N., Ruano, A.L., Mamuya, S.H., *et al.*… (2025). Pregnancy, childcare, and pesticides: Understanding the health risks of women and children in small-scale horticulture in Tanzania. *Qualitative Health Researchhttps.* Doi:10.1177/10497323251342176.

Abstract

Background: Women play a significant role in agriculture worldwide, especially in sub Saharan Africa, where they form a large share of the workforce in horticulture. Horticulture work may expose women to pesticides during pregnancy and childcare, posing serious health risks to women and children. This study explores the experiences of women working in small-scale horticulture in Tanzania during pregnancy and childcare, to understand exposure risks and suggest safety-enhancing interventions. Using the theory of planned behavior framework, five focus group discussions (FGDs) were conducted with women aged from their early 20s to mid-40s. The inductive thematic analysis was used for the analysis of the FGDs. We found that gendered roles in horticulture theoretically assign pesticide spraying to men, with women typically handling lighter tasks. However, when men are unavailable, women, even when pregnant, take on all duties,

including pesticide spraying. Financial pressures force many women to work during pregnancy and postpartum, sometimes bringing infants into the horticulture environments. Despite some protective efforts reported by women, inadequate safety practices persist due to a lack of formal training on pesticide use. Therefore, traditional gender roles, poverty, and pesticide exposure intersect to create an occupational health challenge for women in small-scale horticulture. The absence of women-centered training on pesticide safety increases health risks both for women and their children. This study recommends gender-sensitive health training, improved access to protective equipment, and economic empowerment for women to help reduce this risk.

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455. Mwakalebela, F. S., Minja, E.G., Mwalugelo, Y.A., *et al*... (2025). Association between physical activity, nutritional status and cognitive performance among school children in southern Tanzania. *Frontiers in Public Health*, Vol. *13*. Doi:10.3389/fpubh.2025.1552215.

Abstract

BACKGROUND: Physical activity is pivotal in promoting overall health and wellbeing, improving brain function and cognitive performance, and reducing risk of excessive weight and non-communicable diseases. Despite these benefits, physical inactivity among children and adolescents remains a global concern, particularly in low- and middle-income countries (LMICs). Only few studies have explored the association between physical activity, nutritional status, and cognitive performance in LMICs like Tanzania. This study assessed these associations among school children in a rural setting in southern Tanzania. **Methods:** Physical activity was assessed using an actigraphy device that assessed 7-day average of physical activity among school children aged 6–13 years. Cognitive performance was assessed via the Flanker task, which assessed the executive domain of cognitive functions, specifically information processing and inhibitory control. Weight was determined using Tanita digital scale, and height was measured using measuring board. A multinomial logistic regression model and a gamma generalized linear model with a log link function were used to examine the association between physical activity, nutritional status, and cognitive performance. **Results:** Among 678 children who participated in the baseline assessment, 77.9% had normal weight, 14.3% were underweight, 5.5% were overweight, and 2.4% were obese. Most (92.6%) of the children engaged in at least 60 min per day of moderate-to-vigorous physical activity (MVPA) as per WHO recommendations. Children who did not meet the recommended MVPA level were nearly three times more likely to be obese compared to those who did. No statistically significant associations were found between physical activity and cognitive

performance, or between nutritional status and cognitive performance. **Conclusion:** This study highlights a high prevalence of normal weight and adherence to WHO-recommended MVPA levels among school children in southern Tanzania. However, children not meeting MVPA criteria were more likely to be obese, indicating the importance of physical activity in maintaining a healthy weight. The lack of association between physical activity or nutritional status and cognitive performance, indicates that there may be additional factors that influence cognitive outcomes. Further research is needed to explore these interactions, particularly in rural LMIC settings.

456. Mwakasungura, F., Mkumbwa, R., Sunguya, B. (2025). Facilitators and barriers for healthcare workers' adherence to the national nutritional guidelines for people living with HIV in Dar-es-Salaam: A mixed-method study. *PLOS Global Public Health*, Vol. *5*(2). Doi: journal. pgph.0003664.

Abstract

The dual burden of HIV and malnutrition is a significant public health challenge in high burden Sub-Saharan African countries. Tanzania is no exception. Care and treatment of HIV has been strengthened in these countries, however integration with nutrition care and support remains poor. This study evaluated adherence to nutritional guidelines for people living with HIV (PLHIV) in Dar es Salaam Tanzania and identified its influencing factors. A mixed method study was conducted among PLHIV, health facility administrators, and healthcare providers from April 29 to May 27, 2024. Data were collected through observation checklists, structured questionnaires, and in-depth interviews. Statistical and qualitative analyses were performed to assess adherence and determinants. Among 478 participants who received care, only 19.5% were managed while adhering to the national nutritional guidelines. Universally, anthropometric assessments were taken, however, only 1% received micronutrient supplements. Higher education (AOR = 5.08, p = 0.019) and attendance at referral hospitals (AOR = 8.23, p = 0.032) positively influenced adherence. Conversely, nurse attendance (AOR = 0.34, p = 0.038), adequate staffing (AOR = 0.31, p = 0.010), and urban residence (AOR = 0.47, p = 0.009) negatively influenced adherence. Key facilitators included consistent training and supportive leadership while financial constraints and high staff turnover remained important barriers. There is a significant gap in adherence to nutritional guidelines among PLHIV in Dar es Salaam, Tanzania. This highlights the need for improved resource distribution, staff training, and client's education in Tanzania and countries with similar contexts.

457. Mwakawanga, D., Mutagonda, R.F., Mlyuka, H.J., *et al… (*2025) Improving the provision of clinical pharmacy services in low- and middle-income countries: a qualitative study in tertiary health facilities in Tanzania. *BMJ Public Health,* Vol. 3(1). Doi: 10.1136/bmjph-2024-001776.

Abstract

Background: The provision of clinical pharmacy services (CPS) in low- and middle-income countries is still low. The reported challenges in providing CPS include healthcare structures, public policies, resources, and workforce, culture and education inequalities. This study aimed to explore the strategies to improve the provision of CPS in tertiary health facilities in Tanzania. **Methods**: This study was conducted between August and September 2021. We adopted an exploratory qualitative study to conduct 14 in-depth interviews with hospital administrators and 10 focus group discussions (FGDs) with healthcare providers. A purposeful sampling technique was used to recruit 97 participants, including 45 pharmacists, 31 medical doctors and 21 nurses across five tertiary healthcare institutions. Of those, 14 hospital administrators participated in 14 IDIs, and 83 healthcare workers were divided into 10 FGDs. Analysis was done using a qualitative thematic approach. **Results**: The study identified several strategies that fall under four major themes: (i) strengthen preservice training by reviewing the Bachelor of Pharmacy training curriculum to include clinical pharmacy components; (ii) improve continuing professional training through regular provision of on-job training to pharmacists; (iii) revise the scope of work for pharmacists to include CPS provision in the job description; and (iv) improve operational environment by ensuring availability of guidelines, policies, and adequate number of pharmacists and good inter-professional communication skills. **Conclusions**: This study's findings highlight that improving CPS provision requires strengthening pharmacists' training, scope of work, and operational environment. The latter calls for multifaceted engagement from pharmacists, training institutions, policymakers, regulatory bodies, and health systems for sustainable progress.

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458. Mwakawanga, D.L., Chen, S., Patil, C.L., *et. al*... (2025). Effectiveness of a mobile cardiotocography device (iCTG) in improving antenatal care and detecting abnormal fetal heart rate during late pregnancy: an implementation study in Tanzania. *BMC Public Health,* Vol. 25(1). Doi: 10.1186/s12889-025-25383-4.

Abstract

Background: In Tanzania, 35% of pregnant women fail to complete four antenatal care (ANC) visits, increasing their risk for pregnancy-related complications, maternal mortality, and stillbirth. We evaluated the effectiveness of a Mobile Fetal Heart Monitor (Melody International Ltd, iCTG) device in improving pregnancy and childbirth outcomes in Tanzania. **Methods:** We used a pragmatic, non-randomized clinical trial to evaluate the effectiveness of the 8-month implementation of iCTG. Pregnant women at 32 gestational age or above were monitored using iCTG in intervention facilities (n = 492), while control facilities (n = 271) continued standard care. The primary outcome was the completion of ≥ 4 ANC visits, with secondary outcomes including abnormal fetal heart rate (FHR) detection, birth method, institutional births, Apgar scores, and perinatal outcomes. Binary, multinomial, and Poisson regression models were used to determine the intervention effect. **Results:** iCTG users were twice as likely to complete fewer than 4 ANC

visits (OR: 2.5, 95% CI: 1.28–4.75, p = 0.007). However, iCTG was associated with higher abnormal FHR detection rates (8.08, 95% CI: 2.51–26.02; p < 0.001), increased risk of caesarean section (p < 0.001), reduced risk for Apgar scores < 7 at 5 min (p = 0.024) and fewer perinatal deaths (p = 0.003). There were no significant differences in newborn admission (p = 0.41) or institutional births (p = 0.26). **Conclusion:** Implementing iCTG for antepartum FHR monitoring effectively detected abnormal FHR and was associated with improved newborn outcomes, highlighting its potential to improve perinatal outcomes in Tanzania. However, no effect was found on the number of ANC visits and institutional births. Further studies are needed to assess the effectiveness of iCTG in diverse populations and contexts and identify key factors for optimal implementation.

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459. Mwakichako, R.W., Mnkugwe, R.H., Chamba, C., *et al*... (2025). Outcomes, challenges, and prospects of emicizumab prophylaxis in Sub-Saharan Africa–Insights from the Tanzanian experience. *The Journal of Haemophilia Practice*, Vol. 12(1).

Abstract

Background: Prophylaxis is the global standard of care for haemophilia A (HA), and its adoption has been accelerated by the wide use of emicizumab prophylaxis globally. Reports on the prophylaxis in people with haemophilia living in Africa are limited**. Objectives:** We evaluated adherence trends, bleeding outcomes, and safety profile of emicizumab prophylaxis in haemophilia A patients managed at the Muhimbili National Hospital (MNH), Tanzania. **Methodology:** This was a cross-sectional analysis that included HA patients of all ages on emicizumab prophylaxis. After obtaining informed and institutional approvals, we collected data on adherence patterns, self-reported adverse events, and bleeding outcomes. We assessed factors associated with breakthrough bleeding using a robust Poisson method. **Results:** From January to March 2024, 55 people with HA (PwHA) were included in the study. The median age (IQR) was 8 (4,14) years, with the majority having severe haemophilia. The median (IQR) ABR for spontaneous bleeds was 8 (5,16), which became zero following a year of emicizumab prophylaxis. Most participants (78%) were adherent. Bleeding occurred in 63.6% of the participants, the majority being traumatic (62.9%). Spontaneous bleeding occurred in 17%, while 20% experienced both spontaneous and traumatic bleeds. In the 19 participants with target joints, the target joint resolution was 79% (15/19). Age was the sole predictor of breakthrough bleeding, which occurred predominantly in those over 18 years of age. The adverse event rate was low (9.1%), with injection site reactions being the most frequent. **Conclusions**: In this real-world experience with emicizumab prophylaxis from Africa, the majority of the patients' adherence was good, and emicizumab prophylaxis was effective in preventing spontaneous bleeding. The safety profile of emicizumab was acceptable and consistent with other global real-world experiences.

460. Mwakilasa, M.T., Amour, M., Chombo, S., *et al*… (2025). Retrospective cohort study of predictors of loss to follow-up among adolescents and young adults living with HIV on ART in Dar es Salaam, Tanzania, 2015–2019. *BMC Infectious Diseases,* Vol. 25(852). Doi:10.1186/s12879-025-11157-1.

Abstract

Background: In Tanzania, loss to follow-up (LTFU) among adolescents and young adults living with HIV (AYLHIV) presents a significant challenge. A retrospective cohort study analysing data found that approximately 42% of adolescents on antiretroviral therapy (ART) were LTFU between 2014 to 2016. This study examined the predictors of LTFU among AYLHIV in Dar es Salaam during their first year of ART treatment. **Methods:** This retrospective cohort study utilized routine data collected in care and treatment centres among adolescents and young adults aged 10–24 years living with HIV in Dar es Salaam who were enrolled in HIV care from 2015–2019. The data were analysed using STATA 14. Descriptive statistics were summarized using frequencies and proportions. Kaplan–Meier method was used to determine failure probabilities within one year of ART initiation. The Fine and Gray test was conducted to report adjusted sub-hazard ratios (aSHRs) and cumulative incidence estimates for LTFU within one year of ART initiation, accounting for mortality as a competing risk. **Results:** A total of 15,874 AYLHIVs enrolled in Care and Treatment Clinics between 2015 and 2019 were studied. The majority (10,913, 68.7%) were young adults, and 13,160 (84.4%) were female. The percentage of LTFUs within one year of ART initiation was 15%. The significant predictors of LTFU were age 20–24 years, having a CD4 cell count between 350 and 499, receiving care in healthcare facilities located in the Ubungo district and being enrolled in care between 2018 and 2019. Receiving care at private healthcare facilities, having a tuberculosis co-infection, and being classified as WHO Stage III were all associated with a reduced risk of LTFU in ART care. **Conclusion:** This study found that adolescents and young people in Tanzania experience 15% rates of LTFU in ART care, within one year of ART initiation. Therefore, HIV service providers need to pay particular attention to the AYLHIV and factors that influence LTFU in ART care. The increasing incidence of LTFU necessitates the implementation of effective and friendly tracing interventions to identify AYLHIV patients who have become LTFU to re-engage them in care. **Keywords:** Loss to follow-up Predictors, HIV/AIDS Adolescents Young adult Tanzania.\

461. Mwakilasa, M.T., Mwijage, A., Mushy, S., *et al*… (2025). "They are not HIV treatment drugs; they are preventive drugs (PrEP)". Experiences of PrEP uptake among vulnerable adolescent girls and young women in Tanzania. *Plos one.* Doi: 10.1371/journal.pone.031350.

Abstract

Introduction: HIV poses a significant global health concern, affecting adolescents among other populations. This is attributed to various vulnerabilities including biological factors, gender

inequalities and limited access to comprehensive sexual and reproductive health services in sub-Saharan Africa. In Tanzania, adolescent girls, and young women (AGYW) face double the risk of HIV infection compared to their male counterparts. The introduction of pre-exposure prophylaxis (PrEP) in early 2018 brought hope for changing the HIV cascade in the country. However, numerous challenges still hinder PrEP uptake. Therefore, this study explored experiences of PrEP uptake among vulnerable AGYW in Tanzania. **Methods:** This study employed a phenomenological qualitative approach; 52 semi-structured interviews were carried out between May to November 2022 in the selected healthcare facilities in Tanzania. The study adopted inductive-deductive thematic analysis guided by the Social Ecological Model (SEM) to elicit the views of AGYW aged 15–24. Nvivo software was utilised to organise data. **Results:** This study has uplifted barriers and facilitators on PrEP uptake among AGYW in Tanzania. The barriers are categorized at individual, interpersonal, and institutional levels. The individual level barriers included pre-requisites for initiating PrEP, disbelief in the effectiveness of PrEP, interference of refill hours with working hours, financial constraints, and adherence to the pills. The interpersonal level barriers included misconceptions about PrEP pills, and labelling of PrEP users. The institutional level barriers included inadequate privacy, PrEP drug stockout, being turned away by health care facilities (HCF), long waiting times, and distance to the HCF. Facilitators included factors at individual level (experienced benefit of PrEP, adequate PrEP knowledge, having multiple partners, perceived risk due to the nature of the work, PrEP ensuring privacy), interpersonal level (support from social networks), and institutional level (Free availability of PrEP, receiving refill reminders). **Conclusions:** To overcome barriers to PrEP uptake among AGYW, it is crucial to develop multi-level interventions that consider personal, social, and structural factors hindering PrEP uptake. Implementing strategies like prioritizing off-site PrEP delivery and expanding community outreach for PrEP awareness can help dispel misconceptions and enhance uptake.

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462. Mwakyandile, T.M., Shayo, G.A., Sasi, P.G., *et al*… (2025). Low-dose aspirin is not effective as an adjunct treatment for HIV infection among people living with HIV on dolutegravir-based antiretroviral therapy: A randomised double-blind, parallel-group placebo-controlled trial. *PLoS One*, Vol. 20(8). Doi: 10.1371/journal.pone.0331087.

Abstract

Background: Despite virologic suppression with antiretroviral therapy (ART), immune activation (IA) in people living with HIV (PLHIV) remains high and is linked to non-AIDS complications. Alongside its other virologic and immunologic benefits, aspirin promisingly appears to lower the residual IA in PLHIV in small studies**. Methods:** We conducted a double-blind, parallel-group randomised trial involving ART-naïve PLHIV initiating ART at recruitment. Participants were randomly assigned (1:1) to receive 75 mg aspirin or placebo daily for 24 weeks, alongside standard of care. The primary outcome was proportion of participants attaining HIV viral load < 50 RNA copies/mL at weeks 8, 12 and 24. Secondary outcomes assessed at 12 and 24 weeks were CD4 count, platelet and monocyte activation (soluble P-selectin and soluble CD14, respectively), T-cell activation (CD69 expression, CD38/HLA-DR co-expression) and T-cell exhaustion (PD-1 expression). Data were analysed by intention-to-treat strategy. Between-treatment arm

comparisons were made by regression models using generalised estimating equations. Competing risk analyses were employed for morbidity, all-cause mortality and adverse events (AE). **Results**: Out of 430 recruited participants, 216 were randomised to aspirin and 214 to placebo arms, with 112 and 131 participants completing the study, respectively. Proportions of participants attaining primary outcome at week 24 were comparable (78.4% aspirin arm versus 80.67% placebo arm, $p = 0.53$). There was larger decrease in CD8+CD69+ (%) at 12 weeks only in the placebo arm (median change (IQR): −0.42 (−2.07, 0.33) versus −0.06 (−1.30, 0.90) in the aspirin arm, $p = 0.04$). Other markers and secondary outcomes: morbidity (35.6% versus 34.5%), mortality (4.63 versus 3.27 per 100 person-weeks) and AEs (96.7% versus 98.0%) were similar between the aspirin and placebo arms, respectively, $p > 0.05$. **Conclusions**: Low-dose aspirin initiated alongside ART through 24 weeks did not impact virologic or immunologic markers among PLHIV**.**

463. Mwakyusa, M.O., Said, A., Selemani, S., *et al*… (2025). "If my husband was in the labor ward with me, my baby wouldn't have died"; experiences on birth companionship from a tertiary health facility, Tanzania. *Plos one.* Doi: 10.1371/journal.pone.0309602.

Abstract

Background: Despite existing policies promoting companionship, it remains uncommon in Tanzania. Pregnant women select a trusted individual to accompany them during childbirth, providing emotional, physical, and spiritual support. The World Health Organization recommends birth companionship as integral to intrapartum care for positive maternal and fetal outcomes. **Objective:** This study aimed to explore the experiences of pregnant women and healthcare providers regarding childbirth companionship at a tertiary health facility in Tanzania. **Methods:** Participants were purposefully selected for qualitative exploratory interviews. Focused group discussions were conducted with pregnant women attending antenatal clinics, and in-depth interviews were held with healthcare providers at Mbeya Zonal Referral Hospital in Tanzania. Braun and Clarke's six-step thematic analysis approach was used to analyze the data. **Results:** Three major themes emerged: "Bonding and Learning with Spouse/Partner," "Assurance of Maternal Safety," and "Fear of Blame and Breach of Confidentiality." These themes highlight a strong desire among both pregnant women and healthcare providers for companionship during labor, particularly from male partners. Emotional support and safety were cited as key reasons. Fear, however, was identified as a major obstacle, with providers concerned about potential exposure of mistakes and pregnant women fearing a violation of their privacy rights regarding health matters. **Conclusion:** Pregnant women expressed a strong desire for companionship throughout labor. However, companionship faced challenges due to staff shortages and inadequate privacy in labor wards. There is a pressing need to enhance childbirth companionship practices and policies in low-resource settings.

464. Mwalongo, O., Kisula, L., Credo, D., *et al*... (2025). Phytochemical Composition, Toxicity, and in vivo Antimicrobial Properties of Euphorbia hirta and Plectra thus

barbatus Ethanolic Extracts' Polyherbal Formulation. ***Natural Product Communications*****, Vol. 20(10). Doi:10.1177/1934578X251388330.**

Abstract

Background: Tanzanian communities use an herbal mixture of Euphorbia hirta and Plectra thus barbatus as a decoction to treat several diseases, including respiratory disorders, infertility, urinary tract infections (UTIs), dysmenorrhoea, and pelvic inflammatory disease. Despite its potential health benefits, there is a paucity of information regarding its safety and efficacy. **Objectives:** This study examined the phytochemical profiles, acute and sub-acute oral toxicity of a 1:1 (w/w) extract mixture of E. hirta and P. barbatus (EP), and evaluated the in vivo antimicrobial efficacy of the EP polyherbal formulation in albino mice and Wistar rats. **Methods:** Phytochemical analysis of E. hirta and P. barbatus extracts, as well as the polyherbal formulation, was performed using Gas Chromatography-Mass Spectrometry (GC-MS), Liquid chromatography-Mass spectrometry (LC-MS), and Fourier Transform Infrared Spectroscopy (FTIR), respectively. The toxicity testing was conducted in accordance with Organization for Economic Co-operation and Development (OECD) guidelines 423 and 407. Subsequently, the in vivo efficacy against Escherichia coli American Type Culture Collection (ATCC) 25922 and Methicillin-Resistant Staphylococcus aureus (MRSA) ATCC 43300 was tested at doses of 50, 150, and 450 mg/kg in infected Wistar rats. **Results:** E. hirta and P. barbatus extracts each contained 29 and 24 bioactive compounds, respectively, with known antimicrobial properties. In the acute toxicity test, the Lethal Dose 50% (LD50) of the EP was over 2000 mg/kg. The sub-acute toxicity assessment showed mild morphological changes in the liver and kidneys of Wistar rats at a dose of 1000 mg/kg. However, there were no significant differences in haematological and biochemical parameters between the treatment and control groups. Additionally, the in vivo polyherbal formulation efficacy cleared the E. coli and MRSA loads at a dose of 150 mg/kg by the eighth and 14th days of the test for E. coli and MRSA, respectively. **Conclusion:** The polyherbal formulation demonstrates promising therapeutic efficacy and is considered safe up to 500 mg/kg when administered repeatedly over 28 days.

465. Mwalongo, O., Kisula, L., Credo, D., ***et al.*****… (2025). Comparative evaluation of antimicrobial activity and synergistic effects of selected Tanzanian medicinal plants against urinary tract infection pathogens.** ***South African Journal of Botany,*** **Vol.** ***185*****. Doi: 10.1016/j.sajb.2025.07.057.**

Abstract

The emergence of microbial resistance towards existing drugs for treating UTIs seriously threatens public health worldwide, thus necessitating the search for alternative antimicrobial agents, particularly from medicinal plants. This study determined the standalone *in vitro* antimicrobial activity of ethanolic extracts from *Ocimum gratissimum, Sida acuta, Lantana camara, Plectranthus barbatus, Tridax procumbens,* and *Euphorbia hirta* against selected non-antimicrobial-resistant (AMR) and AMR uropathogens (bacterial strains and *Candida albicans*). Among these, *Plectranthus barbatus, Euphorbia hirta,* and *Lantana camara* exhibited the highest

antimicrobial efficacy. Subsequently, their synergistic interactions were determined against the same test microbes. Plant materials were extracted using 80% ethanol via a maceration technique. The antimicrobial efficacy of the individual and combined extracts was evaluated by broth microdilution against standard and clinical isolate microbial strains, namely *Escherichia coli* ATCC25922, *Klebsiella pneumoniae* K6 ATCC700603, *Staphylococcus aureus* ATCC25923, Methicillin-resistant *Staphylococcus aureus* (MRSA, WHO control), *Enterococcus faecalis* ATCC29212, *Candida albicans* NR29341 and clinical isolate *Klebsiella pneumoniae*, while a checkerboard microdilution assay was employed to assess the combined extracts' interaction. **Result**s: revealed that all the individual plant extracts significantly inhibited the growth of the test microorganisms with varying efficacy [$F(5, 36) = 2.48$, $\eta^2 = 0.8$, $p = 0.002$]. The minimum inhibitory concentration (MIC) values ranged from 0.31 to 6.67 mg/mL. Of the six tested plant extracts, *P. barbatus* and *E. hirta* were highly effective against all tested microbes. The combined extracts exhibited significantly higher antimicrobial activity than individual extracts against all tested microbes [$t(46.74) = -6.49$, Cohen's $d = 1.4$, $p < 0.001$]. Furthermore, the analysis of interaction types among combined extracts demonstrated that double and triple crude extract combinations exhibited partial synergy, additive and indifferent effects. Thus, this study demonstrates the significance of herb therapies of selected medicinal plants in treating UTIs.

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466. Mwanga, A. H., Mbuguje, E. M., Justiniano, J., *et al*… (2025). Leading the fight against liver cancer in Sub-Saharan Africa: developing the first multidisciplinary liver tumour board in Tanzania. *Ecancermedicalscience,* Vol.19. Doi: 10.3332/ecancer.2025.1987.

Abstract

Background: Multidisciplinary tumour boards (MTBs) are regular meetings of various specialist physicians and healthcare professionals who reach a consensus on diagnostic or therapeutic next steps in a cancer patient's care. They have been used for cancer care worldwide. The benefits of these MTBs are well established in the treatment of cancer, leading to higher rates of care completion and improved overall survival. The authors of this study set out to launch an MTB specifically for liver cancer in Tanzania. **Methodology:** In 2023, a multidisciplinary liver tumour board (MLTB) was established at Muhimbili National Hospital in Tanzania. This was designed to promote maximum engagement among medical specialties and international collaborators. **Results:** MLTB meetings were held weekly in-person and virtually, where members submit patient cases for review of clinical presentation, imaging, pathology and presumed diagnosis to allow discussion of next steps in diagnosis or treatment. A consensus recommendation is then communicated to the involved departments and the presenting physician proceeds with scheduling the patient for completion of the recommendations. **Conclusion:** This MLTB model aims to facilitate a comprehensive multidisciplinary treatment strategy for patients diagnosed with liver cancer. MLTBs are expected to enhance the quality of care provided to patients and promote the utilization of advanced therapeutic options available in these nations. **Keywords:** liver tumour, delivery of health care, Tanzania, Sub-Saharan Africa, multidisciplinary team meeting.

467. Mwanga, H.H., Mamuya, S.H.D., Moen, B.E., *et al*… (2025). Prevalence and risk factors for asthma among adults in Tanzania. *Clinical Epidemiology and Global Health,* Vol. 34. Doi: 10.1016/j.cegh.2025.102065.

Abstract

Background: Limited information exists on the magnitude of asthma and associated factors in Africa. In Tanzania, very few studies have conducted epidemiological investigations of adult asthma. This study investigated the prevalence and risk factors for asthma in Tanzania. **Methods:** A cross-sectional study of 968 adults was conducted. An interviewer-administered European Community Respiratory Health Survey questionnaire was used. Current asthma was defined as having had an asthma attack, current use of asthma medication, or being woken up by an attack of shortness of breath, in the past 12 months. Asthma outcomes were analysed using multivariate regression models. **Results:** The median age was 43 years, and 50 % were females. The prevalence of current asthma was 10 %, while 4 % reported doctor-diagnosed asthma and 10 % reported ≥2 asthma symptoms. The prevalence of hay fever was 10 %, and 9 % reported a family history of allergy. Risk factors associated with ≥2 asthma symptoms included hay fever (OR = 4.94; 95 %CI: 2.85–8.58), eczema (3.28; 1.51–7.11), family history of allergy (2.34; 1.23–4.47), repeated childhood chest infections (7.98; 3.70–17.24), having no food to eat (3.83; 1.86–7.87) and exposure to biomass fuels-use of wood for cooking/heating (6.52; 3.16–13.48). Nonallergic current asthma was strongly associated with low socioeconomic status (5.66; 1.16–27.71). **Conclusions:** Asthma was relatively common, with a prevalence of 10 %. Limited food availability, exposure to biomass fuels, allergy, and childhood respiratory infections were identified as important risk factors for asthma. These findings underscore the need to identify the specific aspects of low socioeconomic status that can be targeted to reduce the asthma risk.
Keywords: *Adults Asthma Developing country Tanzania.*

468. Mwanjala, M. N., Lebba, J., Mosi, G., *et al*... (2025). Timely response and containment of 2022 Cholera outbreak along Lake Tanganyika in Kigoma *region,* Tanzania. *Bulletin of the National Research Centre,* Vol. 49(1). Doi:10.1186/s42269-025-01332-4.

Abstract

Background: Cholera outbreaks have been reported worldwide, causing excessive health and economic burdens. From January 2023 to March 2024, about 824,479 cholera cases and 5,900 cholera deaths were reported by 31 countries, Tanzania being among them. The Kigoma region reported cholera outbreaks with limited scientific information on management of those outbreaks. This study aims at informing the interventions implemented to contain the cholera outbreak that occurred in 2022 along Lake Tanganyika in the Kigoma region, Tanzania. **Methods:** A retrospective cross-sectional study was conducted from 1st June 2022 to 30th January 2023 in the Kigoma region. The study included all the cholera cases reported from 14th April 2022 to 22nd May 2022 at Kalya Ward, in Kigoma Region. Epidemiological and clinical information was collected from cholera line list. Information regarding response interventions was extracted from regional situational reports and the outbreak report, categorized based on the public health emergency response pillars. The statistical analysis was done using Stata Software, and the map was drawn using QGIS. **Results**: The outbreak lasted for 40 days, from April 2022 to May 2022, with 126 cholera cases and zero deaths reported. The cases were reported from three villages along the lakeshore of Lake Tanganyika, Sibwesa village being the most affected, with an attack rate of 1.5%. The multisectoral response was timely initiated, and cases were actively searched, reported, tested, and treated promptly. Improvements in water, hygiene, and sanitation were accompanied by risk communication and community engagement. **Conclusion:** The cholera outbreak was timely detected and rapidly contained, involving multisector and multidiscipline stakeholders in implementing interventions across response pillars. Proper documentation of response activities during the outbreak is essential in learning, planning, and implementing cholera preparedness and response interventions.

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469. Mwanjala, M.N., Mnkeni, E., Mtalika, M.I., *et al*… (2025). Assessment of risk communication and community engagement interventions during the Marburg virus disease outbreak in Kagera region, Northwestern Tanzania. *Bulletin of the National Research Centre*, Vol. 49(1). Doi:10.1186/s42269-024-01298-9.

Abstract

Background: Marburg virus disease (MVD) is a deadly illness caused by the zoonotic Marburg virus, which has led to outbreaks with fatality rates up to 100% in some African countries. On March 21, 2023, Tanzania had its first MVD outbreak, resulting in nine cases and six deaths, leading to a fatality rate of 66.7%. Following that, the Risk Communication and Community Engagement (RCCE) approach was promptly initiated to create community awareness regarding the MVD. A descriptive cross-sectional assessment was conducted in May 2023 in Bukoba District Council and Bukoba Municipal Council in the Kagera region to document the community awareness and sources of information regarding MVD during the outbreak. Data were collected using a structured questionnaire developed using the WHO COVID-19 RCCE Rapid Quantitative

Assessment Tool. Descriptive analysis was conducted using Microsoft Excel 2021.**Results:** There were a total of 714 community respondents, of whom 456 (63.9%) were from Bukoba District Council. The majority 628 (88%) were aged 18 years and above. There were 393 (55%) females, and 407 (57%) of respondents had completed primary education. All respondents reported being informed about MVD through different channels, with 588 (82.4%) receiving information from Community Health Workers. Most of them 573 (80.3%) were satisfied with implemented RCCE interventions, 651 (91.2%) perceived MVD to be an extremely severe disease, and 698 (97.76%) mentioned hand washing as one of the recommended preventive measures. **Conclusions:** During the Marburg virus disease outbreak response, where risk communication and community engagement interventions were implemented, the community was aware of the Marburg virus disease and community health workers emerged as the most frequently mentioned channel of communication during the outbreak.

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470. Mwasanjobe, T.E., Ebrahim, A., Mbembela, O., *et al*... (2025). Discrepancies in Peripheral Arterial Function Indices Among Healthy Young Black Africans: Findings from a Pilot Study Interpreted Using AHA Reference Values. *Artery Research*, 31(1). Doi:10.1093/ndt/gfq614.

ABSTRACT

Background: Accumulating evidence points to a rise in the incidence of peripheral arterial diseases (PAD) among young adults in Sub-Saharan Africa (SSA), highlighting the need for assessing peripheral arterial function (PAF) in this demographic. Current research from Asian populations suggests that established cut-off values for diagnosing PAD—using assessment parameters, such as Ankle-Brachial Index (ABI), Toe-Brachial Index (TBI), and Pulse Volume Waveform (PVW)—may not accurately represent population-specific reference values. This study evaluates these parameters in a carefully selected population of healthy young black Africans, using American Heart Association (AHA) reference values for ABI and TBI to assess their agreement in classifying normal and abnormal readings compared to PVW. The results were also analyzed across sex and between the left and right sides. **Methods:** We carefully and systematically recruited 156 healthy black Africans aged 18–35 years with no characteristic's indicative of peripheral arterial dysfunction. An automated device that uses oscillometry and photoplethysmography concurrently measures ABI, TBI, and PVW in a controlled environment. The visual comparison and Student's t-test were employed to compare these values with the AHA references. **Results:** Approximately 19.1% (n = 23) of participants had an ABI < 0.9, and 41.3% (n = 50) had a TBI < 0.7 in at least one limb, indicating abnormally low peripheral arterial indices according to AHA criteria. The prevalence of ABI < 0.9 was higher in the left leg (17.4%) compared to the right leg (6.6%), and among males (18.7%) compared to females (15.3%). Similarly, TBI < 0.7 was more prevalent in the left leg (33.9%) than the right leg (24.8%), and higher in females (40.4%) than males (28.1%). Notably, 91% of participants with ABI < 0.9 in the

right leg and 97% in the left leg had normal (grade A) PVWs, while 97.6% of those with TBI < 0.7 also had grade A PVWs. **Conclusion**: Healthy young black Africans' ABI and TBI values differed between the right and left legs. A significant proportion of individuals classified as abnormal according to ABI had normal PVWs based on AHA criteria. These findings highlight the need to carefully interpret ABI results in young populations and emphasize the importance of concurrent ABI and PVW measurements. Larger studies are warranted to refine population-specific reference ranges and explore right–left differences' physiological and clinical implications.

471. Mwelange, L., Mamuya, S., Nyarubeli, I., *et al*... (2025). Carcinogenic chemicals used in selected industries and agriculture sectors in Tanzania. A descriptive study. *International Journal of Occupational Safety and Health*, Vol. 15(2). Doi:10.3126/ijosh. v15i2.69022.

Abstract

Introduction: In Tanzania, there are 50,000 cancer cases reported annually, and this number is projected to double by 2030**.** Workplace exposure to carcinogens may be a contributing factor to cancer risk. However, there is limited knowledge about the presence and use of carcinogenic chemicals at workplaces in developing countries, particularly in sub-Saharan Africa. The study aimed to describe the presence of carcinogens in chemical agents used in industry and agriculture sectors in Tanzania. **Methods:** Data about chemicals used in industries and agriculture in Tanzania were extracted from the databases of two government regulatory authorities: the Government Chemist Laboratory Authority (GCLA) and the Tanzania Plant Health and Pesticide Authority (TPHPA). The chemicals were evaluated based on the presence of carcinogens in groups 1, 2A, 2B and 3 according to the classification by the International Agency for Research on Cancer. **Results:** A total of 2907 chemicals were assessed from the industries. Five percent of the chemicals were carcinogens. The cement industry had the highest proportion of chemicals containing carcinogens, accounting for approximately 14%. Formaldehyde was the most frequently occurring Group 1 carcinogen, present in 45% of the industries studied. Additionally, out of the 1855 pesticides assessed, 2% were found to contain carcinogens. **Conclusion:** This study revealed the presence of carcinogens in chemicals within industrial chemicals and agricultural pesticides in Tanzania. It indicates that workers employed in these workplaces could potentially be at risk of carcinogen exposure, which necessitates the implementation of regulatory measures.

472. Mwelange, L.P., Mamuya, S.H., Nyarubeli, I.P., *et al*… (2025). Occupational exposure to respirable dust among ceramic tiles industry workers in Tanzania. *Discover Public Health*, Vol. 22(1). Doi:10.1186/s12982-025-00927-6.

Abstract

Ceramic tile manufacturing is relatively new in Tanzania. Workers in these ceramic tile industries may be exposed to dust from stone materials, increasing their risk of developing diseases such as

lung diseases. The study aimed to assess dust exposure among workers in ceramic tiles industry and to evaluate the crystalline silica content in respirable dust samples. A cross-sectional exposure study was carried out in a ceramic tiles industry in Tanzania in 2023. Personal dust sampling was done using plastic cyclone samplers with 37 mm diameter plastic cassettes. A total of 100 personal respirable dust samples were collected, of where 10 were randomly selected for crystalline silica content analysis. Data were analyzed using descriptive statistics and linear mixed-effects regression models. The overall geometric mean (GM) exposure to respirable dust in the factory was 0.66 mg/m3. The press and spray departments had the highest GM respirable dust exposure, at 1.22 mg/m3 and 1.07 mg/m3, respectively. A mixed model regression analysis indicated that work in the spray, press, kiln, and gas station departments, operating machines and wind speed, explained approximately 92% of the between-worker variance and 66% of the total variance. The concentration of respirable crystalline silica for the 10 selected respirable dust samples had a GM of 0.123 mg/m3. Workers in the ceramic tiles industry are exposed to respirable dust with a high crystalline silica content. Immediate measures are necessary to reduce dust exposure and prevent adverse health effects among workers. ***Keywords:*** *Crystalline silica, Ceramic tiles industry, Dust, Occupational health, Plastic cyclone sampler.*

473. Mwelange, L.P., Nyarubeli, I.P., Sakwari, G., *et al*... (2025). Occupations and Risk of Head and Neck Cancers: A Case–Control Study in Tanzania. *International Journal of Environmental Research and Public Health*, Vol. 22(11). Doi:10.3390/ijerph22111643.

Abstract

Cancer is a major global health concern. Head and neck cancers are the sixth most prevalent type of cancer globally; it has been suggested that these cancers can be caused due to pesticide exposure during agricultural activities. In this study, we aimed to investigate whether agricultural labor is associated with an increased risk of head and neck cancers. A case–control study was conducted at the Ocean Road Cancer Institute in Tanzania, a national, specialized cancer hospital. A total of 298 head and neck cases and 305 controls were included. Occupational history and information about lifestyle factors and diet were obtained by interview. Using logistic regression analyses and adjusting for lifestyle and diet, an increased risk of head and neck cancer was found among workers with a history of agricultural work, with an odds ratio of 2.6 and a 95% confidence interval of 1.60–4.37. When including only non-smokers and non-alcohol users (n = 363), a similar estimate was found. Participants with over 10 years of agricultural work experience (n = 481), after adjusting for lifestyle and diet, had an odds ratio of 5.1 (95% CI, 2.56–9.94). Our findings indicate that agricultural work is associated with the risk of head and neck cancer. Carcinogens in

agriculture should be examined in future studies. ***Keywords:*** *agriculture; cancer; head and neck cancer; occupation; Tanzania.*

474. Mwera, I.C., Sichalwe, M.M., Mamuya, S.H., *et al*… (2025). Work-related injuries and occupational safety practices among sugar factory workers in Tanzania: A cross-sectional study. *Sage Open Medicine*, Vol.13. Doi:10.1177/20503121251385675.

Abstract

Background: Work-related injuries are a significant public health and socioeconomic concern, with the International Labour Organization reporting 2.3 million deaths and 340 million injuries annually worldwide. This study examined work-related injuries and occupational safety practices among sugar factory workers in Tanzania. **Methods:** This descriptive cross-sectional study, conducted from January to February 2024, involved 338 workers from two Tanzanian sugar industries. Participants were recruited using systematic sampling. Data were collected via structured questionnaires and environmental observation checklists. SPSS version 27 was used for descriptive univariate and bivariate analyses, with significance set at $p < 0.05$. **Results:** Among 338 workers, 14.8% reported injuries during the previous production session, with 89.3% occurring while performing tasks outside their assigned duties. The main causes were hand tools (35.7%) and fire or hot substances (21.4%), with abrasions (42.9%) being the most common injury type, primarily affecting the arms or hands (32%). Work-related injuries were significantly associated with occupational factors. Higher injury prevalence was observed among workers with <5 years of experience (48.1%, $p = 0.02$), factory employees (68.9%, $p = 0.001$), those without Occupation Safety and Health (OSH) supervision (26.0% vs 11.1%, $p = 0.004$), and workers not using personal protective equipment (58.0% vs 42.0%, $p = 0.02$). **Conclusion:** Work-related injuries was relatively low but mostly occurred during unassigned tasks. Strengthening workplace safety culture, ensuring consistent supervision, and promoting proper protective equipment use are essential to reducing work-related injuries.

475. Mwing'a, G. P., Kimu, P. A., Beti, M., *et al*… (2025). Trends and seasonal variation in gastrointestinal infections in Tanzania: Analysis of 5-year DHIS2 data toward implementing the sampling cycles and metagenomic analyses. *IJID regions* Vol. 16. Doi: 10.1016/j.ijregi.2025.100661.

Abstract

Objectives: Gastrointestinal (GI) infections, such as diarrhea and dysentery, continue to be major contributors to morbidity and mortality in low-resource countries. Determining trends and seasonality of GI infections provides a better understanding of how interventions can be improved to reduce the burden. To this effect, an analysis of data from the District Health Information System 2 (DHIS2) was conducted to determine the trend and seasonal variations of GI infections in regions located in the Great Lakes of Tanzania. **Methods:** Data from DHIS2 of 22 districts in Tanzania recorded between January 2018 and December 2022 were analyzed for trends and seasonal variations in GI infections. The data were managed and analyzed by STATA and Microsoft Excel. **Results:** A total of 1,511,623 GI cases were recorded between January 2018 and

December 2022, with diarrhea leading by 84.4%. Data have shown clear seasonal variations of GI infection: peaks during the rainy season and a decline in the dry season. **Conclusion:** Results have revealed that there is a significant decrease in GI infections from January to August, and the cases increase from September to December. This confirmed two sampling cycles, the dry and rainy seasons, within which pathogen characteristics and diversity will be elucidated.

476. Mwingwa, A., Shangali, A., Niccodem, E., *et al*… (2025). First case report of multidrug-resistant Tatumella ptyseos causing surgical site infection in Tanzania. *Oxford Medical Case Reports,* Vol. 2025(1). Doi:10.1093/omcr/omaf052.

Abstract

A 53-year-old man developed a surgical site infection after undergoing a pylorus-preserving pancreaticoduodenectomy despite receiving preventive antibiotics. The infection was linked to Tatumella ptyseos, a rare and multidrug-resistant gram-negative bacterium from the Enterobacterales order, which mainly affects immunocompromised individuals. Identifying the pathogen proved challenging; standard biochemical tests did not provide conclusive results, necessitating the use of the Analytical Profile Index and a specialized biochemical panel for Enterobacterales. This case marks the first documented occurrence of multidrug-resistant T. ptyseos causing a surgical site infection in Tanzania. It underscores the rising presence of uncommon pathogens in healthcare settings and emphasizes the need for enhanced diagnostic methods and infection control strategies, especially in resource-limited environments where antibiotic resistance presents significant challenges. **Keywords:** Tatumella ptyseos, surgical site infection, Tanzania.

477. Mziray, S.R., Githinji, G., de Laurent, Z.R., *et al*… (2025). Deploying metagenomics to characterize microbial pathogens during outbreak of acute febrile illness among children in Tanzania. *Pathogens,* Vol. 14(6). Doi:10.3390/pathogens14060601.

Abstract

Outbreaks of infectious diseases contribute significantly to morbidity and mortality in resource-limited settings, yet the capacity to identify their etiology remains limited. We aimed to characterize microbes and antimicrobial resistance (AMR) genes in Tanzanian children affected by an acute febrile illness (AFI) outbreak using metagenomic next-generation sequencing (mNGS). A cross-sectional study was conducted on archived blood samples from children who presented with AFI between 2018 and 2019. Total nucleic acids were extracted from 200 µL of blood, and complementary DNA (cDNA), along with enriched pathogenic DNA, was sequenced using the Illumina MiSeq platform. mNGS data were analyzed using CZ-ID Illumina mNGS bioinformatics pipeline v7.0. Results were obtained from 25 participants (mean age: 11.6 years; SD ± 5), of whom 36% had a moderate to high-grade fever. The following five potential microbial causes of AFI were identified: *Escherichia coli* (n = 19), *Paraclostridium bifermentans* (n = 2), *Pegivirus C* (n = 2), *Shigella flexneri* (n = 1) and *Pseudomonas fluorescens* (n = 1), with *E. coli* being the most prevalent. Twelve AMR genes were detected, including *mdtC*, *acrF*, *mdtF*, and *emrB. E. coli* harbored most of the AMR genes previously associated with resistance to commonly used

antibiotics. mNGS offers a promising complementary approach to conventional diagnostics for identifying pathogens and AMR profiles in vulnerable populations.**Keywords:** metagenomic next-generation sequencing; mNGS; acute febrile illness

478. Mzurikwao, D., Sakafu, L., Mayala, S., *et. al*… (2025). Profiling of Breast Cancer Prevalence and Its Diagnosis Using Varied Imaging Techniques in Tanzania. *Journal of Computational Science and Data Analytics*, Vol. 2(01). Doi:10.69660/jcsda.0201250.

Abstract

Breast cancer is not only the most commonly occurring cancer among women, but also the most frequent cause of cancer-related deaths in women in developing countries. The mortality rate is marginally higher in developing countries than in developed countries with about 60% of the deaths occurring in developing countries. In Tanzania for example, breast cancer is the second leading cancer in terms of incidence and mortality among women after cervical cancer. Approximately half of all women diagnosed with breast can cer in Tanzania die of the disease. This is due to the limited number of medical facilities for cancer screening and diagnosis, the limited number of oncologists and pathologists, and the diagnosis costs in the country. Due to the mentioned factors, it is approximated that, 80% of breast cancer cases in Tanzania are diagnosed at advanced stages (III or IV), when treatment is less effective and outcomes are poor. By 2030, new breast can cer cases are approximated to increase by 82% in Tanzania. The diagnosis/screening of breast cancer starts with breast imaging with ultrasound and mammograms. Suspected cases are then subjected to pathology for confirmatory tests. Although breast imaging plays a major role in both breast cancer screening and diagnosis, the service is largely not available in many developing countries. Our study found the absence of routine breast cancer screening in Tanzania, resulting in late-stage detection of many cases. This is mainly due to a lack of enough well-trained radiologists to read the images and the costs of the process. This study is aimed at exploring the role, importance and challenges of breast imaging in the screening and diagnosis of breast cancer in Tanzania, a developing country. It is worth noting that, breast imaging is an important step in screening for breast cancer. Our results found that, there is a significant number of malignancies under the recommended age of breast cancer screening of fifty years of age. Our study also found a very high Inter variability among radiologists. This study also discovered in our sample size that 66% of patients did not have their samples taken for confirmation by the pathologists. This might be due to the costs of the process or loss of follow-ups as many patients came far from the diagnosis Centre. Due to the higher intervariability among radiologists, this suggests the necessity of at least two radiologists reading the same case before the conclusion of the diagnosis. Also, due to the significant number of malignancies under the recommended age of 50 years, this study recommends the age to be reconsidered based on different settings. Due to the challenges observed in breast imaging, this study recommends the use of computer-aided diagnosis (CAD) with Artificial Intelligence to assist the limited number of radiologists available. ***Keywords:*** *Breast cancer, medical imaging, breast imaging, data analysis, Artificial in-telligence, radiology.*

479. Naburi, H., Sewunet, T., Tellapragada, C., *et al*… (2025). Emergence of carbapenem-producing Enterobacteriaceae (CPE) and other multidrug-resistant gram-negative

bacteria in neonates at a tertiary-level NICU in Tanzania: a point prevalence study. *JAC-Antimicrobial Resistance*, Vol. 7(5). Doi:10.1093/jacamr/dlaf179.

Abstract

Aim: Multidrug-resistant (MDR) Gram-negative bacilli pose a significant threat in neonatal care. This study aimed to evaluate the point prevalence and molecular characteristics of intestinal MDR colonization in neonates at Muhimbili National Hospital, Tanzania. **Method:** We conducted a point prevalence study with faecal samples from 51 neonates born ≥26 weeks' gestational age (41% girls, mean 31.6±3.8 weeks) admitted to the neonatal intensive care unit (NICU) at Muhimbili National Hospital on 17 May 2022. The median age at sampling was 8 days (interquartile range 11 days). Samples were cultured on chromogenic agar, and positive colonies underwent antimicrobial susceptibility testing. Whole-genome sequencing and plasmid analysis using Optical DNA Mapping (ODM) were performed on carbapenem-resistant isolates. **Results:** Among the 51 neonates, 31 (60.7%) were colonized by ESBL-producing Klebsiella pneumoniae (EP-KP) and/or Escherichia coli (EP-EC). Of these, 15 isolates were carbapenem-producing Enterobacteriaceae (CPE) harboring blaNDM-5, blaCTX-M-15, and eight also carried blaOXA-181. The most prevalent carbapenemase-producing Klebsiella pneumoniae (CP-KP) sequence type (ST) was ST437, part of the high-risk clonal complex CC11, while the most common carbapenemase-producing E. coli (CP-EC) was ST167. Both CP-KP and CP-EC were MDR isolates encoding blaCTX-M-15 and blaNDM-5. Optical DNA Mapping showed that the blaNDM-5 encoding plasmids in at least six carbapenem-producing isolates (four KP ST437 and two EC ST167) were similar, suggesting plasmid transfer. **Conclusion:** A high prevalence of colonization with high-risk clones was observed in neonates, highlighting the urgent need for strengthened MDR-surveillance, infection control, and antibiotic stewardship in the NICU at MNH.

480. Najjingo, I., Soka, G., Mbabazi, M., *et. al.*.. (2025). Factors associated with diagnostic delays in lung cancer in East Africa: The role of symptoms and passive smoking. *European Respiratory Journal.* Doi: 10.1183/13993003.congress-2025.PA292.

Abstract

Background: Screening for lung cancer often relies on symptom presentation and diagnostic imaging, yet many symptoms are non-specific, leading to potential misdiagnoses and delays. **Methods:** Adults (≥18 years) with biopsy-confirmed lung cancer were enrolled from cancer clinics in Uganda and Tanzania. Logistic regression analyzed factors associated with diagnostic delays stratified by HIV status. **Results:** From 2022, 528 potential lung cancer cases were screened; 227 (43.0%) were confirmed. The median age was 59 years (IQR: 49-68), with a majority of females (55.0%) and (7.9%) infected with HIV-1. Out of the 18 HIV-1 infected individuals, only two had detectable viral loads. Current and passive smokers comprised 26.4% and 18.5% of the cohort, respectively. Adenocarcinoma was the most common type (50.2%), with advanced-stage presentation (III and IV) in 89.3% of cases. Diagnostic delay, defined as seeking care after 90 days from symptom onset, occurred in 30% (95% CI: 25.1%-37.2%). Significant factors included cough (OR=3.7, 95% CI: 1.23-11.41, P=0.020), hemoptysis (OR=1.5, 95% CI:

1.03-2.10, P=0.034), household smoking (OR=1.5, 95% CI: 1.03-2.25, P=0.036), and history of chest radiation (OR=1.9, 95% CI: 1.33-2.70, P<0.001). HIV status and socio-demographic characteristics were not statistically significant. **Conclusion:** A significant proportion of lung cancer patients experienced diagnostic delays, influenced by specific symptoms and passive smoking. Enhancing public awareness about key symptoms and the risks of passive smoking is crucial. Future interventions should focus on public health education and training for early symptom recognition among healthcare providers.

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481. Natarajan, P.M., Priya, V., Yadalam, P.K., *et. al*… (2025). Forecasting post-periodontal surgery healing using federated DQN models: when reinforcement learning isn't enough. *Bulletin of Stomatology and Maxillofacial Surgery,* Vol. 21 (10). Doi: 10.58240/1829006X-2025.21.10-5.

Abstract

Background: Predicting healing outcomes after periodontal flap surgery is important for personalized patient care, but conventional machine learning methods dominate this area. Reinforcement learning (RL) approaches are rarely applied in periodontal clinical datasets due to data scarcity, class imbalance, and high outcome variability. This study addresses this gap by exploring a split-federated MonAco-style Deep Q-Network (DQN) encoder model for classifying postsurgical healing outcomes (Good, Fair, Poor) from a small multi-center dataset. Materials and **Methods**: We analyzed a dataset of 300 periodontal surgical patients with five numeric features (age, probing depth, attachment loss, gingival index, and plaque index) and four categorical features (sex, smoking status, diabetes status, and procedure type). The data were one-hot encoded and standardized, then split into 80/20 training and testing sets. The training set was further partitioned into 3 “clients” to simulate federated learning across clinics. We implemented a MonAcoFed-DQN encoder, consisting of an online multilayer perceptron and a momentum-based target encoder (updated via an exponential moving average), along with a classification head. A contrastive mean-squared error loss was added to the cross-entropy loss to stabilize the training process. Federated training used FedAvg over three local epochs per round. A baseline model with a hidden size of 64, a learning rate of 1e-3, and three federated rounds was evaluated. A grid search over hyperparameters (hidden units {32, 64, 128}, learning rate {1e-3, 5e-4, 1e-4}, local epochs {5, 10}) optimized accuracy. An extended 10-round federated training with the best hyperparameters examined learning dynamics. Performance was compared to SOTA results from the literature on larger datasets. **Results**: The split-fed DQN encoder scored 36% accuracy, just above the 33% chance level due to class imbalance. Hyperparameter tuning improved accuracy to 37.1% with a wider encoder, lower learning rate, and 10 epochs. Most setups ranged from 20% to 35%, with a median of ~34%, where smaller models or higher learning rates underperformed. The learning curve peaked early at 33%, then oscillated near 30–31%, and finally ended at 31.4%. These results are much lower than traditional ML on larger datasets, which often achieve 78–87% accuracy/AUC. **Conclusion**: This pilot study employed a split-federated DQN encoder (MonAcoFed-DQN) on periodontal surgery data, demonstrating technical feasibility with momentum contrast; however, it achieved only 30–37% accuracy due to limitations in the dataset. It emphasizes the need for more data and balanced classes in deep reinforcement learning for

clinical use. Simpler models or tree-based methods are suitable for small medical datasets. Future efforts should enlarge datasets, incorporate domain knowledge, and develop hybrid or tabular-specific deep models to enhance periodontal treatment predictions.

482. Ndayomwami, J.A., Mwamelo, J.A., Kaniki, H. A., *et al*... (2025). Trends in antibiotic use among cardiovascular heart disease inpatients at the Jakaya Kikwete Cardiac Institute in Tanzania from 2016 to 2022. *Antimicrobial* Stewardship *& Healthcare Epidemiology*, Vol. *5*(1). Doi:10.1017/ash.2025.1024.

Abstract

We assessed inpatient antibiotic use over six fiscal years at Tanzania's national cardiac referral hospital. Overall use was 29.9 defined daily doses per 100 bed-days. Carbapenems were dominant. Reserve agents comprised 47.0%, and watch agents comprised 31.7%. Patterns indicate missed access targets and a need to strengthen stewardship in cardiac care.

483. Ndile, M.L., Charles, S., Lukumay, G. (2025). Barriers to effective communication among nurses and family members of patients admitted to the intensive care unit at Muhimbili National Hospital in Dar es Salaam: A descriptive qualitative study. *Plos one*, Vol. 20(9). Doi: 10.1371/journal.pone.0330374.

Abstract

Background: Effective communication in healthcare is essential for ensuring quality patient care. As healthcare shifts toward family-centered care, nurses are expected to engage families in information sharing and decision-making about their patients. However, barriers to effective communication in intensive care units (ICUs) exist. While global studies have addressed nurse-family communication, most are quantitative and conducted in contexts not similar to Tanzania. This study aimed to qualitatively explore the barriers nurses face in the Tanzanian context when communicating with family members in the ICUs at Muhimbili National Hospital, Dar es Salaam, Tanzania. **Methods:** A descriptive qualitative study was conducted using semi-structured interviews to explore communication barriers. Purposive sampling was used to select fifteen ICU nurses and twelve family members of ICU patients at Muhimbili National Hospital. All interviews were audio-recorded with consent and transcribed verbatim. Data were analyzed thematically following Braun and Clarke's six-phase framework. **Results:** The study identified two main themes emerging from the interviews: 1) Interpersonal barriers affecting the nurse-family relationship, and 2) Organizational barriers related to the work environment and resource limitations. **Conclusion:** The study highlights that improving communication in ICU settings goes

beyond individual efforts; it requires investment in staff training, adequate infrastructure, and a supportive organizational culture. Addressing both interpersonal and organizational barriers through targeted interventions can foster trust, enhance family satisfaction, and contribute to improved patient outcomes in critical care environments.

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484. Ngalaba, G.F., Tungu, M. (2025). Factors associated with the current use of modern contraceptives among unmarried sexually active women in Geita region, Tanzania. *Discover Health Systems*, Vol. 4(1). Doi:10.1136/bmjopen-2019-030485.

Abstract

Background: Unplanned pregnancies pose a significant public health threat in low and middle-income countries, including Tanzania. Most of these pregnancies end up in unsafe abortions and increase maternal morbidity and mortality. Despite the government's effort to promote the use of modern contraceptives to attain access to sexual and reproductive health services for all, the utilization among sexually active unmarried women was still very low. **Objective:** This study aimed to determine factors associated with the current use of modern contraceptives among unmarried sexually active women (15–49 years) in Geita, Tanzania. **Material and methods:** This was a cross-sectional study. Data were collected using a structured self-administered questionnaire. Descriptive statistics were summarized using frequencies and proportions for categorical variables. The chi-square test and logistic regression analysis were used to investigate factors associated with the current use of modern contraceptives. **Results**: A total of 194 respondents participated in the study. The demographic profile indicated a predominantly young population, with 60.8% aged 15–24 years. Modern contraceptive use was reported by 35.6% of respondents. Key factors associated with contraceptive use included age, relationship status, and communication with sexual partners. Younger women (15–24 years) were less likely to use modern contraceptives compared to older women (35–49 years) (AOR = 0.25, 95% CI 0.06–0.996). Women in sexual relationships were more likely to use contraceptives than those not in relationships (AOR = 2.04, 95% CI 1.05–3.97). Partner communication also significantly increased contraceptive use (AOR = 1.90, 95% CI 1.02–3.55). **Conclusion: The** use of modern contraceptives among unmarried sexually active women in the Geita region was still low. Age, relationship status, and communication with partners were significant factors associated with modern contraceptive use. Comprehensive sexual and reproductive health education, outreach programs, and supportive policies should be implemented to promote open communication and access to modern contraceptives for unmarried sexually active women, particularly those aged 15–24.

485. Ngasala, B., Opoku, K. B., Amagai, K., *et al*... (2025). Assessment of malaria rapid diagnostic tests and histidine-rich protein 2 deletions among asymptomatic children and adults in Bagamoyo, Tanzania. *The* American *Journal of Tropical Medicine and Hygiene*, Vol. *112*(4). Doi:10.4269/ajtmh.24-0209.

Abstract

Malaria rapid diagnostic tests (mRDTs) that detect histidine-rich protein 2 (HRP2) remain the mainstay of falciparum malaria diagnosis in Sub-Saharan Africa. Understanding their test characteristics when used for surveillance in asymptomatic populations is important. We explored the rate of false-positive and false-negative mRDT results among asymptomatic persons >5 years old screened for malaria at schools and clinics in the rural Bagamoyo District using 18S ribosomal RNA real-time polymerase chain reaction (qPCR) as the reference test. Among 5,966 persons screened using mRDTs, microscopy, and qPCR tests from 2018 to 2021, 14% (832) were mRDT-positive. Twelve percent of these (98/832) were negative by both microscopy and qPCR, with children overrepresented among those with false-positive mRDTs. Among those who were mRDT-negative, 22% (1,136/5,134) tested qPCR-positive, predominantly because of low-density parasitemia (92% had <100 p/μL by qPCR). Among mRDT-negative samples with >100 p/μL, we looked for evidence of *hrp2* or histidine-rich protein 3 (*hrp3*) deletion using two methods, multiplexed qPCR and multiplex bead-based immunoassay. When sufficient parasite material existed for a reliable deletion assessment, 12/34 (35%) had evidence of *hrp2/3* deletion by qPCR (nine *hrp2–/3+* and three *hrp2–/3–*), and 20/52 (38%) had evidence of deletion by immunoassay. Only three isolates showed evidence of *hrp2* deletion by both assays. In an area of low to moderate transmission in Tanzania, false-positive mRDTs are relatively common (12% of positive tests), and false-negative mRDTs are even more common (22% of negative tests), but *hrp2/3* deletion causing false-negative mRDTs remains rare (<1% of negative tests).

486. Ngereja, S.J., Nhungo, C. J., Petro, E., *et al*... (2025). Penile Pyoderma Gangrenosum: A Rare Presentation and Review of Management Strategies: Case Report. *Clinical Case Reports*, Vol. 13(10). Doi: 10.1002 /ccr3.70957.

ABstract

Penile pyoderma gangrenosum is a rare but important differential diagnosis for ulcerative lesions of the genital region. Early recognition and systemic treatment, especially with corticosteroids, are crucial for effective management and avoiding the penile mutilating effect of the disease. Clinicians should consider PPG in cases of unexplained genital ulcers, particularly in the absence of infection or trauma.

487. Ngimbwa, J., Nchasi, G., Paul, I., *et al*… (2025). Three-year Post-Stroke Outcomes in Urban Tanzania. *Journal of the* Neurological *Sciences,* Vol4(13). Doi: 10.1016/j.jns.2025.125017.

Abstract

Background: Stroke is one of the leading causes of death and disability globally. Despite advancements in acute stroke care, long-term outcomes have not been extensively studied in Tanzania. This study aimed to investigate the long-term post-stroke outcomes among adults admitted with stroke to a large tertiary hospital in northwestern Tanzania. Methods: Adults (≥18 years) with stroke who were enrolled in the Lake Zone Stroke Registry Study (LZSS) at Bugando Medical Center between March 2020 and October 2021 were prospectively followed up until October 2024. Stroke diagnosis and classification were confirmed using brain imaging, and baseline stroke severity was assessed using the National Institutes of Health Stroke Scale (NIHSS). Data on case fatality were collected using the modified Rankin Scale along with information on secondary stroke prevention. The Kaplan–Meier analysis was used to describe survival, and the Cox regression model was used to examine independent factors associated with fatality. **Results:** The study included 301 adults, with a mean age of 65.5 ± 14 years, of whom 51% (153/301) were female and 68% (205/301) had ischemic strokes. Case fatality rates were 42.9% (98/228) at 1 year, 75.9% (173/228) at 2 years, and 96.5% (220/228) at 3 years. Independent factors associated with fatality were severe stroke (adjusted hazard ratio (aHR) 7.9, 95% CI [2.3, 27.4], $p = 0.001$), moderate to severe stroke (aHR 4.6, 95% CI [1.3, 16.1], $p = 0.017$), a lack of health insurance coverage (aHR 3.7, 95% CI [1.9, 6.8], $p < 0.001$), and previous stroke (aHR 3.3, 95% CI [1.3, 8.3], $p = 0.01$). Attendance rates of follow-up clinics and physiotherapy among survivors were 28.6% (86/301) and 8.6% (26/301), respectively. Among stroke survivors with hypertension and diabetes, 32% (83/257) and 41% (20/49) were adherent to antihypertensive and diabetic medications, respectively. **Conclusion:** This study highlights the high long-term case fatality rates among adults with stroke in northwestern Tanzania, with stroke severity, a lack of health insurance, and previous strokes being key factors associated with fatality. Low attendance rates at follow-up clinics and poor adherence to medications among survivors of stroke with hypertension and diabetes underline the importance of strengthening post-stroke care systems, including health insurance coverage, to improve survival and quality of life.

488. Ngimbwa, J., Nchasi, G., Paul, I.K., *et al*… (2025). Three-year post-stroke outcomes in urban North-western *Tanzania*. *Frontiers in Stroke*, Vol. 4 (1593092). Doi:10.3389/fstro.2025.1593092.

Abstract

Background: stroke is one of the leading causes of death and disability globally. Despite advancements in acute stroke care, long-term outcomes have not been extensively studied in Tanzania. This study aimed to investigate the long-term post-stroke outcomes among adults admitted with stroke to a large tertiary hospital in northwestern Tanzania. **Methods:** adults (≥18 years) with stroke who were enrolled in the Lake Zone Stroke Registry Study (LZSS) at Bugando Medical Center between March 2020 and October 2021 were prospectively followed up until

October 2024. Stroke diagnosis and classification were confirmed using brain imaging, and baseline stroke severity was assessed using the National Institutes of Health Stroke Scale (NIHSS). Data on case fatality were collected using the modified Rankin Scale along with information on secondary stroke prevention. The Kaplan–Meier analysis was used to describe survival, and the Cox regression model was used to examine independent factors associated with fatality. **Results:** the study included 301 adults, with a mean age of 65.5 ± 14 years, of whom 51% (153/301) were female and 68% (205/301) had ischemic strokes. Case fatality rates were 42.9% (98/228) at 1 year, 75.9% (173/228) at 2 years, and 96.5% (220/228) at 3 years. Independent factors associated with fatality were severe stroke (adjusted hazard ratio (aHR) 7.9, 95% CI [2.3, 27.4], $p = 0.001$), moderate to severe stroke (aHR 4.6, 95% CI [1.3, 16.1], $p = 0.017$), a lack of health insurance coverage (aHR 3.7, 95% CI [1.9, 6.8], $p < 0.001$), and previous stroke (aHR 3.3, 95% CI [1.3, 8.3], $p = 0.01$). Attendance rates of follow-up clinics and physiotherapy among survivors were 28.6% (86/301) and 8.6% (26/301), respectively. Among stroke survivors with hypertension and diabetes, 32% (83/257) and 41% (20/49) were adherent to antihypertensive and diabetic medications, respectively. **Conclusion:** this study highlights the high long-term case fatality rates among adults with stroke in northwestern Tanzania, with stroke severity, a lack of health insurance, and previous strokes being key factors associated with fatality. Low attendance rates at follow-up clinics and poor adherence to medications among survivors of stroke with hypertension and diabetes underline the importance of strengthening post-stroke care systems, including health insurance coverage, to improve survival and quality of life.

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489. Ngongi, L.I., Akiba, C.F., Kilonzo, M.N., *et al*… (2025). Barriers, facilitators and potential solutions to implementing the Kiddie Schedule for Affective Disorder and Schizophrenia (KSADS) screening tool at Muhimbili National Hospital in Dar es Salaam, Tanzania. *Plos one,* Vol. 20.5. Doi: 10.1371/journal.pone.0323502.

Abstract

Background: Attention Deficit Hyperactivity Disorder (ADHD) affects 5% of adolescents globally. ADHD increases the child's risk for adverse outcomes, including school failure, juvenile delinquency, substance abuse, and increased sexual risk behaviors. ADHD can be diagnosed in children using the Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS). Semi-structured or structured diagnostic interviews, such as the KSADS-Present and Lifetime (PL) version by Kaufman and colleagues, are the gold standard in diagnosing psychiatric disorders like ADHD. Nevertheless, KSADS-PL is not used in routine clinical practice in Tanzania. There is no research exploring barriers and facilitators to the use of KSADS-PL in resource-limited areas, including Tanzania. The study aimed to uncover barriers, facilitators, and possible solutions related to psychiatric care providers' routine use of KSADS-PL at the Muhimbili National Hospital (MNH) in Dar-es-Salaam, Tanzania. **Methods:** Between July and October 2019, we conducted semi-structured interviews that focused on providers' perceptions of facilitators, barriers, and solutions regarding KSADS-PL integration into routine clinical practice. Data were analyzed using a qualitative thematic approach informed by the Consolidated Framework for Implementation Research (CFIR). **Results:** Limited knowledge and lack of training about KSADS-PL represented the most mentioned perceived barrier for providers. Some providers reported inadequacy of both

human and material resources, high workload, and limited physical space at the clinic. Facilitators included readiness for KSADS-PL implementation and providers' desires for uniform and standardized ways of detecting ADHD. Suggested solutions included involving hospital leaders, support for provider training, increasing staff, making KSADS-PL tools readily available, utilizing an online version of the tool, creating departmental standards, maximizing space at the clinic, and reorganizing clinic flow. **Conclusion:** Findings suggest a need for innovative implementation science solutions such as multifaceted educational strategies focusing on ongoing training and supervision to increase clinical knowledge, reorganizing clinic flow to increase the quality and duration of patient-provider interaction, as well as role shifting and other planning strategies that may address barriers like understaffing.

490. Ngowi, E., Osman, R., Salum, H.M., *et al*... (2025). Mevalonate kinase deficiency (hyperimmunoglobulin D syndrome) in a Tanzanian girl: a case report. *Journal of Medical Case Reports*, Vol. 19(1). Doi: 10.1186/s13256-025-05637-w.

Abstract

Background: Hyperimmunoglobulin D syndrome is a rare, autosomal recessive autoinflammatory syndrome caused by mevalonate kinase enzyme deficiency. It is characterized by recurrent febrile attacks beginning in the first year of life. Treatment is mainly supportive, and there are successful reports of trials of novel therapies such as anakinra and canakinumab. **Case presentation:** We present a case of a 3-month-old girl from Tanzania, East Africa, who experienced recurrent febrile attacks, sepsis, and anemia since her first week of life. She also exhibited arthritis, generalized lymphadenopathy, urticaria, dermatitis, and failure to thrive. After multiple hospital admissions for similar symptoms, a diagnosis of primary immunodeficiency was considered, and genetic testing revealed two heterozygous-like pathogenic variants in the mevalonate kinase gene. **Conclusion:** This case highlights the importance of clinicians in low-resource settings to have a high index of suspicion for primary immunodeficiencies when managing patients with recurrent febrile infections and to consider genetic studies for accurate diagnosis.

491. Nguyen, S., Brown, J., Sheriff, F. (2025). A Readiness Assessment Tool for Mechanical *Thrombectomy* Programs in Resource-Limited Settings Stroke. *Vascular and Interventional Neurology*, Vol. 5(196). Doi:10.1161/svi270000_196.

Abstract

Background: Mechanical thrombectomy (MT) has transformed the treatment of acute ischemic stroke due to large-vessel occlusion, yet access to this intervention is profoundly limited in low- and middle-income countries (LMICs), where as little as <1% of patients have access to treatment. Building MT capacity requires substantial investment in infrastructure, trained personnel, and systems of care. However, no standardized framework currently exists to evaluate institutional readiness for establishing MT services in resource-limited settings. **Objective:** We developed a Mechanical Thrombectomy Readiness Assessment Instrument (MT-RAI) to provide a structured approach for evaluating institutional capacity and guiding phased implementation of MT programs. We demonstrate its utility in evaluating the needs of the stroke programs at Muhimbili

National Hospital (MNH) and Muhimbili Orthopedic Institute (MOI), Tanzania. **Methods:** The MT-RAI was adapted from the Interventional Radiology Readiness Assessment Tool and informed by a Delphi consensus study of 29 neurointerventional experts from 20 countries, which defined the minimum requirements for initiating MT in LMICs. The instrument consists of 26 items across five domains: (1) institutional interest and baseline services, (2) facilities and personnel, (3) logistics, (4) equipment, and (5) capacity for growth and academic activity. Readiness assessment results were used to guide a strengths, weaknesses, opportunities, and threats (SWOT) framework to identify strategic priorities for implementation. **Results:** Application of the MT-RAI at MNH and MOI revealed strong institutional commitment, existing angiography suites, and multidisciplinary infrastructure, including neurology, neurosurgery, intensive care, and radiology services. Ongoing collaborations with international partners, including Road2IR, provided additional training and resource support. Weaknesses included limited numbers of trained neurointerventionalists, shortages of radiographers and technologists, reliance on donated consumables, and challenges in equipment maintenance and repair. Opportunities were identified in the development of a national stroke registry, partnerships with the World Stroke Organization and WHO, and integration of MT into a broader national stroke care strategy. Threats included limited public stroke awareness, underdeveloped referral pathways leading to delayed patient presentation, and financial barriers related to insurance coverage and supply chains. **Discussion:** The MT-RAI offers a practical, adaptable tool for systematically evaluating readiness to implement thrombectomy capabilities in LMICs. Unlike prior global neurosurgical initiatives that expanded existing services, MT programs often require de novo establishment, necessitating structured frameworks to prioritize resources and harmonize planning across institutions and governments. By combining readiness assessment with SWOT analysis, we demonstrate how this approach can guide phased program development, target capacity-building efforts, and support long-term sustainability through training, partnerships, and integration into national health systems. **Conclusions:** Implementation of MT in LMICs requires careful alignment of institutional resources, personnel, and health system capacity. The MT-RAI provides a flexible framework to guide this process and can be applied broadly to institutions planning thrombectomy services. Our application in Tanzania highlights both feasibility and challenges, and underscores the importance of structured readiness assessment in global efforts to expand access to life-saving stroke interventions.

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492. Nhungo, C.J., Gilbert, D.G., Nzowa, B., *et al.*.. (2025). Giant adrenal neuroblastoma in adults: surgical management and comprehensive review. *Clinical Case Reports*, Vol. 13(4). Doi:10.1002/ccr3.7045.

Abstract

Neuroblastoma (NB) is a rare solid tumor of the sympathetic nervous system, primarily occurring in children and rarely in adults. Its extracranial origin stems from the medullary region of the adrenal gland or sympathetic ganglia. We report an 18-year-old female who presented with a 6-month history of abdominal swelling and tenderness. Imaging revealed a large retroperitoneal mass causing significant displacement of adjacent structures. Following multidisciplinary optimization, a huge tumor was successfully resected surgically. Histopathology confirmed the

diagnosis of adrenal NB. The patient underwent adjuvant chemotherapy and remained symptom-free with favorable outcomes during a 9-month follow-up. This case underscores the importance of comprehensive diagnostic evaluation and multimodal management in treating rare adult adrenal NB.

493. Nisar, Y.B., Brigadoi, G., Ariff, S., *et. al*… (2025). Target product profiles for paediatric formulations of azithromycin and nitrofurantoin. *Bulletin of the World Health Organization*, Vol. 103(12). Doi:10.2471/BLT.25.294422.

Abstract

Bacterial infections are still a main cause of death in children younger than 5 years, yet few age-appropriate antibiotic formulations exist, which limits treatment options and compromises quality of care. In 2023, the World Health Organization (WHO) published its first list of priority paediatric antibiotic formulations to guide research and development for age-appropriate antibiotic formulations. Both azithromycin and nitrofurantoin are on this list. Currently, no dispersible tablets are approved or available for these drugs and existing liquid forms are poorly palatable and/or contain excipients of safety concern. To support the development of age-appropriate formulations for these two antibiotics, we produced target product profiles using WHO's methods. For azithromycin, the optimum age-appropriate formulation and dose is scored 100 mg dispersible tablets or an orodispersible 50 mg multiparticulate formulation, with dispersible 50 mg tablets as the minimum requirement. For nitrofurantoin, the optimum age-appropriate formulation is an orodispersible multiparticulate formulation or scored dispersible tablets, with dispersible tablets as the minimum requirement. Based on the WHO recommended dosage of 4 mg/kg per day for children for nitrofurantoin, the optimum unit dose is 5 mg. If scoring is feasible, a 10 mg unit dose should be developed for dosing flexibility across paediatric age groups. These profiles aim to support regulatory authorities, pharmaceutical developers, health programmes and other stakeholders in advancing safer, effective and child-appropriate antibiotic formulations.

494. Njambilo, G., Hambuhambu, F.E., Mhina, R.I., *et. al*… (2025). The Quality of Discharge Summaries at a Tertially Level Hospital in Tanzania. *The Egyptian Orthopaedic Journal*, Vol. 60(4). Doi:10.21608/EOJ.2025.467112

Abstract

Background: A discharge summary is a document prepared by a doctor at the end of the patient's hospitalization with an intention of transferring patient's information from in-patient to out-patient settings and between hospital admissions. The World Health Organization recommends a good summary to include patient identification, reasons for admission, examinations and findings, treatment while in the hospital and proposed follow up plan. **Objectives:** This study aimed at assessing the quality of discharge summaries based on the completeness of documentation of their different sections. **Materials and Methods:** A descriptive cross-sectional study conducted at Muhimbili Orthopedic Institute (MOI) to assess discharge summaries of patients with femoral shaft fracture treated by intramedullary nailing between July and December 2021. **Results:** One hundred twenty-five (125) discharge summaries were included, all of which were hand written. None of them had complete documentation in all the five domains as recommended by the WHO. In the section of patient identification, sex was the most documented parameter (98.4%) while the Patients' names and date of birth were partially documented in 99.2% and 97.6% of all discharge summaries respectively and telephone numbers were not documented at all in 98.4% of DS. The surgery performed was the most documented patient's hospital stay parameter (56%) whereas the name of the discharging doctor was partially filled in 96.8% of DS. None of the DS documented post-operative complications. The section on the condition of the patient at discharge was the least filled of all four sections, where the vital signs were completely written in only 5.6% of all DS while 93.6% and 84% of them did not report on physical examination and history respectively. In the section of post discharge instruction majority of them reported on post discharge medications (95.2%), while 90.4% had incomplete information on date for the next visit, post discharge wound care and modality of ambulation were not written in 59.2% and 56% of DS respectively. **Conclusions:** Most of the discharge summaries were partially documented. Efforts should be targeted in emphasizing appropriate documentation to avoid the adversities that may result from lack of sufficient information. ***Keywords:*** *Discharge summary, Documentation, Medical report, Muhimbili Orthopedic Institute, Tanzania.*

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495. Njambilo, G.M., Haonga, B.T., Husein, M.M., *et al*… (2025). Epidemiology of Prosthetic Dislocation After Total Hip Replacement at a Tertiary Level Hospital, Tanzania. The Egyptian Orthopaedic Journal, Vol. 60 (2). Doi:10.21608/eoj.2025.43179

Abstract

Background: Dislocation of the prosthesis is a serious complication after total hip replacement (THR) with the overall rate ranging between 0.2 and 10%. It is responsible for the higher rate of readmission; long hospital stays and the majority of early revision surgeries. A little is known about this topic in sub–Saharan Africa; This study aimed at addressing the knowledge gap on the epidemiology of prosthetic dislocation among patients who underwent THR in our locality. **Patients and Methods**: A retrospective descriptive study was conducted at Muhimbili Orthopedics Institute among patients who had THR between 2016 and 2020. The standardized data extraction sheet was used to collect information on age, gender, indication for THR, surgical approach, type of prosthesis, presence of dislocation, mechanism for dislocation, and time interval from surgery to dislocation. **Results**: A total of 389 participants were enrolled, out of which 229(59%) were male, and 160(41%) were female; all the patients underwent THR by direct lateral

approach. Sixteen patients (4.1%) had a prosthetic dislocation, most of which occurred among male subjects (4.8%), P value = 0.4. Most dislocations occurred in those above 80 years (14.3%), P value = 0.02. Patients with neck of femur fractures had the highest rate of prosthetic dislocations (7.4%) when compared with the other indications of surgery (P value = 0.2). Most dislocations occurred within three months of surgery (68.7%), and the most common mechanism was spontaneous dislocation (56.3%).
Conclusions: The rate of prosthetic dislocation after THR is high in our setting; the majority are early and occur spontaneously. Age is significantly associated with the occurrence of dislocation. Therefore, stratifying risk, especially in elderly patients, and taking extra precautions in the early days following THR is important. Furthermore, prospective studies should be done on risk factors for dislocation after THR.

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496. Njau, A.F., Robert, M., Rwebembera, A., *et al*... (2025). Prevalence and associated factors for HIV, HBV, and syphilis coinfections among pregnant women attending antenatal care in Tanzania. *Plos One*, Vol. 20(8). Doi: 10.1371/journal.pone.032906.

Abstract

Background: Coinfection with HIV, hepatitis B virus (HBV) and syphilis increases the risk of vertical transmission. Hence, affecting overall maternal health and child health outcomes. The Tanzanian government is planning to add HBV screening to the existing Prevention of Mother to Child Transmission (PMTCT) of HIV and syphilis program; however, the burden of coinfections in the country is unknown. Therefore, this study aimed to determine the prevalence of HIV, HBV and syphilis coinfections and their associated factors among pregnant women receiving antenatal care in Tanzania. **Methods:** A facility-based cross-sectional study design was conducted, utilizing data from the national feasibility study of triple testing for HIV, syphilis and HBV among pregnant women. The data were analysed via STATA version 16.1, and bivariate and multivariate logistic regressions were used to check for associations. Variables with a P value of < 0.05 were considered statistically significant. **Results:** A total of 7,828 pregnant women were enrolled, 0.4% (95% CI 0.3–0.6) of whom were coinfected. The prevalence rates for HIV/HBV, HIV/syphilis, HBV/syphilis and HIV/HBV/syphilis coinfections were 0.1% (95% CI 0.1–0.2), 0.2% (95% CI 0.1–0.4), 0.1% (95% CI 0.0–0.2) and 0.0% (95% CI 0.0–0.1), respectively. History of multiple sexual partners (AOR 6.1; 95% CI: 1.3–29.7, P = 0.025) was associated with HIV/HBV coinfection. Age 25–49 years (AOR 13.5; 95% CI 1.8–103.8, P = 0.012) and marital status (AOR 0.2; 95% CI 0.1–0.8, P = 0.018) were associated with HIV/syphilis coinfection. For HBV/syphilis coinfection, marital status (AOR 0.1; 95% CI 0.0–0.9, P = 0.036) and history of multiple sexual partners (AOR 16.8; 95% CI 2.5–114.9, P = 0.004) were independently associated. **Conclusion:** Coinfections are present among pregnant women in Tanzania; therefore, it is important to include hepatitis B screening in the existing PMTCT of HIV and syphilis program. Interventions should focus on single, child-bearing women with multiple sexual partners.

497. Njelango, J., Makupa, A., Kalikivayi, V., *et al*... (2025). Progression of Myopia and Associated Risk Factors among Pediatric Patients at a Tertiary Hospital in Northern Tanzania: A Cross-sectional Study. *Ophthalmology Research: An International Journal*, Vol. 20(4). Doi:10.9734/or/2025/v20i4467.

Abstract

Objective: To determine the proportion and factors associated with myopia progression among pediatric patients attending the Kilimanjaro Christian Medical Centre (KCMC) in Northern Tanzania. **Methods:** A hospital-based analytical cross-sectional study was conducted at the Pediatric Eye Clinic of KCMC from January 2022 to April 2024. Pediatric patients aged 4–18 years diagnosed with myopia (spherical equivalent ≤ –0.50D) and with follow-up refraction 11–13 months after baseline were included. Data were collected through clinical assessments and structured face-to-face interviews. Myopia progression was defined as an increase in spherical equivalent between visits. Generalized linear models with Poisson distribution and robust standard errors were used to estimate crude and adjusted prevalence ratios (PRs) with 95% confidence intervals (CIs). **Results:** Of 201 eligible participants, 63.2% (n=127) demonstrated myopia progression. In unadjusted analyses, significant associations with progression were observed for male sex (PR=0.79; 95% CI: 0.63–0.98), non-spectacle wear (PR=1.37; 95% CI: 1.12–1.69), mobile device use (PR=1.49; 95% CI: 1.22–1.82), viewing television at ≤2 meters (PR=1.65; 95% CI: 1.33–2.06), prolonged near work (>2 hours/day) (PR=1.74; 95% CI: 1.42–2.14), reduced outdoor time (<1 hour/day) (PR=0.65; 95% CI: 0.45–0.92), and a positive family history of myopia (PR=1.80; 95% CI: 1.42–2.29). In adjusted analysis, four factors remained independently associated with progression: older age >13 years was protective (PR=0.64; 95% CI: 0.43–0.96), while near work >2 hours/day (PR=1.55; 95% CI: 1.23–1.94), television viewing distance ≤2 meters (PR=1.31; 95% CI: 1.07–1.62), and a positive family history (PR=1.53; 95% CI: 1.23–1.91) were associated with increased risk. **Conclusion:** Myopia progression was notably prevalent. Younger age, prolonged near work, close television viewing, and a positive family history emerged as independent risk factors. These findings highlight the urgent need for early screening, behavior-focused education, and targeted interventions to address modifiable risk factors and mitigate the rising burden of myopia among pediatric populations in African settings.
Keywords: *Myopia progression, children, near work, screen time, spectacle use, Tanzania.*

498. Njelekela, D.A., Kishimba, R., Noah, M., *et al*… (2025). Magnitude of opportunistic infections and associated factors among HIV-infected individuals attending care and treatment clinics in Dar es Salaam, Tanzania: a hospital-based cross-sectional study. *Infectious diseases*, Vol. 15(10). Doi:10.1136/bmjopen-2024-085725

Abstract

Objectives: This study aims to assess the magnitude of opportunistic infection (OI) and to identify factors associated with OIs among people living with HIV (PLHIV) on antiretroviral treatment

(ART), attending HIV care and treatment clinics. **Design:** A hospital-based cross-sectional study: **Setting:** The study was conducted at Muhimbili National Hospital, Mwananyamala and Temeke Regional Referral Hospitals, in Dar es Salaam, Tanzania. **Participants:** We enrolled 382 PLHIV on ART who were attending HIV care and treatment clinics in Dar es Salaam. Structured questionnaires were used to collect socio-demographic information, and a checklist was used to extract clinical characteristics from the client's HIV care and treatment clinic cards. Information was subjected to descriptive and regression analysis using Stata V.13. All factors were considered significant at $p<0.05$. Primary outcome: Magnitude, spectrum of OI, and associated factors among PLHIV using ART. **Results:** A total of 382 PLHIV on ART were randomly selected and recruited in the study. The overall prevalence of OIs was 25.13%; the leading OI was tuberculosis affecting 58 patients (15.2%). CD4+ T cell counts≤200 cells/μL (aOR=13.61; 95% CI: 6.09 to 30.38) $p<0.001$, isoniazid preventive treatment (IPT) (aOR=4.10; 95% CI: 1.97 to 8.53) $p<0.001$, WHO clinical stage 4 (aOR=6.37; 95% CI: 1.47 to 27.61) $p=0.013$, divorced individuals (aOR=3.57; 95% CI: 1.43 to 8.90) $p=0.006$, male (aOR=3.04; 95% CI: 1.50 to 6.17) $p=0.007$, haemoglobin level<11.0 g/dL (aOR=2.25; 95% CI: 1.14 to 4.47) $p=0.020$ and level of education of primary and below (aOR=4.31; 95% CI: 1.8 to 10.32) $p=0.001$ showed significant association with OIs. **Conclusion:** There was still a high prevalence of OI observed in this study which needs to be addressed. CD4+ T cell counts of ≤200 cells/μL, advanced WHO clinical stages, no use of IPT prophylaxis, anaemia and low education level were predictors of OIs. Promptly implementing the test-and-treat protocol while an individual's immunity is still strong and timely screening for OI are critical.

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499. Nkinda, L., Barabona, G., Ndubi, M., *et. al*… (2025). T-Cell Interferon Gamma Responses to SARS-CoV-2 Following Infection with/Without Vaccination in a Tanzanian Population. *Infection and Drug Resistance*, Vol. 6323. Doi:10.2147/IDR.S532514.

Abstract

Background: T-cell responses are crucial in SARS-CoV-2 immune-control; however, limited data exist from African populations. We assessed interferon-gamma (IFN-γ) release by T cells among Tanzanian adults (18–70 years) previously infected with or without SARS-CoV-2 vaccination, using the ELISpot assay. We also characterized background plasma IFN-γ levels in this population. **Methods:** Peripheral blood mononuclear cells (PBMCs) from 143 individuals, sampled 1–12 months post SARS-CoV-2 exposure, were stimulated with overlapping peptides spanning the Spike and Nucleocapsid proteins. T-cell responses were measured by ELISpot assay, and plasma IFN-γ concentrations by ELISA. Associations with participant characteristics were analyzed using gamma linear and modified Poisson regression models ($p < 0.05$ considered significant). **Results:** We found high background T-cell IFN-γ release in 73.4% (105/143) of participants, leaving 38 (26.6%) with detectable responses above background; (38/38;100%) to Spike and (36/38;94.7%) to Nucleocapsid peptides. T-cell response magnitude did not differ by symptomatic/asymptomatic infection or vaccination status. However, each one-year increase in age was associated with a 1% decline in mean T-cell response ($p = 0.029$). Moreover, among participants with high background responses, 43/105;41% had elevated plasma IFN-γ, and 5/105;

4.8% showed cytokine storm-level concentrations. Alcohol consumption was significantly associated with elevated plasma IFN-γ ($p = 0.041$). **Conclusion:** Strong and possibly cross-reactive T-cell responses to SARS-CoV-2 were detected in Tanzanian individuals following infection with/without vaccination. Moreover, high plasma IFN-γ levels were detected, especially among participants who consumed alcohol. We recommend for modifications of the ELISpot T-cell assays to optimize the evaluation of pathogen-specific T-cell responses among African residents given the high background IFN-γ release. **Keywords:** SARS-CoV-2, ELISpot assay, high background, immune activation, Africa, Tanzania.

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500. Nkongoki, A. M., Balandya, E., Mamuya, S., *et al*… (2025). High magnitude of lung function impairment among heroin users attending a medication-assisted therapy clinic at Muhimbili National Hospital, Tanzania: a cross-sectional study. *BMJ Open*, 15(9). Doi:10.1136/bmjopen-2025-104144.

Abstract

Objective: Heroin users have a high burden of respiratory morbidity, including premature lung function impairment. Further, methadone treatment has been found to aggravate lung function impairment and can independently cause asthma. However, the lung function status among heroin users on medication-assisted therapy (MAT) in Tanzania is yet to be studied. This study aimed to assess the magnitude, pattern, and factors associated with lung function impairment among heroin users on MAT. **Design:** This was a quantitative, analytical cross-sectional study. SETTING: This study was conducted at the MAT Clinic at Muhimbili National Hospital in Dar-es-Salaam, Tanzania. **Participants:** Individuals aged 18 years or above with heroin use disorder on a stable dose of methadone without heroin withdrawal symptoms (Maintenance Phase of Treatment) were recruited. METHODS: Participants were enrolled through systematic sampling technique. Data were collected using a questionnaire, and lung functions were measured using a spirometer. Lung function impairment was defined as the percentage of participants with forced expiratory volume in 1 s (FEV1) <70%. Risk factors associated with lung function impairment were assessed via univariate binary logistic regression. **Results:** We enrolled 302 participants into the study (mean age of 42.78±7.56 years). Lung function impairment was observed in 28.5% of participants, with an average age of 44±8 years. Restrictive lung disease was the most common pattern of lung function impairment, affecting 13.2% of the participants. The predictors of lung function impairment were being underweight (OR 4.73, 95% CI 2.61-8.59, p<0.001), living with HIV infection (OR 2.61, 95% CI 1.20 to 5.66, p=0.016), and having a history of pulmonary tuberculosis (OR 2.48, 95% CI 1.48 to 4.17, p=0.001). **Conclusion:** Heroin users on MAT have a high magnitude of lung function impairment. Routine lung function testing is recommended.

501. Nkya, S., Mahawi, I., Shungu, R., *et al*... (2025). Early-life clinical and hematological profiles: a comparative study of children with and without sickle cell disease in the first three years of life. Annals of Hematology, Vol. 104(10). Doi:10.1182/BLOOD-2010-04-278747.

Abstract

Background: Sickle cell disease (SCD) has been associated with significant morbidity and mortality, particularly in early childhood. Understanding the hematological and clinical outcomes during the early years of life is crucial for guiding interventions to improve care for affected populations. This study investigates the relationship between fetal hemoglobin (HbF) levels, hematological profiles, and clinical outcomes in children with SCD, from birth to three years of age. By comparing children with and without SCD, the study aimed to identify trends in disease progression and highlight the need for early screening and intervention. This longitudinal study recruited and followed children aged 0–3 years. Clinical complaints and hematological parameters were recorded at each visit. Statistical analyses explored associations between HbF levels, hematological parameters, and clinical outcomes in children with SCD. 414 children were recruited, 35.5% with SCD and 64.5% without SCD. Children with SCD experienced a higher frequency of clinical complaints. The hospital admission rate was higher among children with SCD (19.6%) compared to those without (1.7%) ($p < 0.007$), with severe anemia being the leading cause of admission (56.3%). At birth, children with SCD had higher HbF levels (72.87%) that declined over time. The rate of decline correlated with an increased frequency of clinical events in children with SCD. Additionally, children with SCD had lower red cell indices and higher reticulocyte count as well as white blood cell count. The results emphasize the need for early intervention and continuous monitoring to manage the disease effectively. Further research is recommended to explore the impact of different interventions on improving the quality of life and survival rates in children with SCD.

502. Nkya, S., Nzunda, C., Saukiwa, E., *et al*… (2025). *Exploring* pharmacogenetic factors influencing hydroxyurea response in Tanzanian sickle cell disease patients: a genomic medicine approach. *Pharmacogenomics Journal*, Vol. 25(3).

Abstract

In sub-Saharan Africa, sickle cell disease (SCD) remains a significant public health challenge. Despite the discovery of SCD over a century ago, progress in developing and accessing effective treatments has been limited. Hydroxyurea is the primary drug used for managing SCD and associated with improving clinical outcomes. However, up to 30% of patients do not respond to hydroxyurea, likely due to genetic factors. This study involved 148 individuals with SCD

investigated the association of hydroxyurea response with genetic variants across 13 loci associated with HbF synthesis and drug metabolism, focusing on MYB, HBB, HBG1, HBG2, BCL11A, KLF10, HAO2, NOS1, ARG2, SAR1A, CYP2C9, and CYP2E1. Significant associations with hydroxyurea response were identified in CYP2C9, CYP2E1, KLF10, BCL11A, ARG2, HBG1, SAR1A, MYB, and NOS1 loci. Furthermore, pathway enrichment and gene-gene interaction analyses provide deeper insights into the genetic mechanisms underlying hydroxyurea treatment response, highlighting potential avenues for personalized therapy in SCD management.

503. Nnko, G., Patel, S., Rugengamanzi, E., *et al*… (2025). Characteristics and Impact of p16 Expression in Patients with Oropharyngeal Squamous Cell Carcinoma in Tanzania. *JCO Global Oncology,* Vol. 11. Doi: 10.1200/GO-24-00652.

Abstract

Purpose: Oropharyngeal cancer is on the rise, despite declines in other head and neck cancers. The primary cause of this increase is human papillomavirus (HPV) infection, which accounts for over a quarter of new cancer patients in Tanzania. These cancers are largely preventable through HPV vaccination. HPV-associated oropharyngeal squamous cell carcinoma (OPSCC) is recognized as a distinct molecular and clinical entity, with unique demographics, staging, survival, and prognosis. International guidelines recommend that all staging, prognosis, and treatment decisions for OPSCC occur after determining the p16 expression, a surrogate immunohistochemical marker for HPV infection. However, current Tanzanian guidelines and clinical practice do not incorporate p16 immunohistochemistry (IHC) testing, despite the availability of qualified pathologists and laboratories. **Patients and Methods:** This retrospective hospital-based cohort study was conducted at the Ocean Road Cancer Institute (ORCI) and Muhimbili National Hospital in Dar es Salaam, Tanzania. A total of 83 patients with OPSCC were included. We assessed the sociodemographic and clinicopathologic profiles and the impact of p16 expression on overall survival (OS) in patients with OPSCC treated at the ORCI. **Results:** The prevalence of p16-positive OPSCC was found to be 43.4%. Patients with p16-positive tumors were younger and predominantly male and had a 3-year OS of 36% compared with 16.6% in those with p16-negative tumors. **Conclusion:** Our findings support the use of p16 IHC as a prognostic biomarker for OPSCC. In addition, the high prevalence of p16-positive OPSCC in our cohort suggests the broader implementation of gender-neutral HPV vaccination across Tanzania.

504. Nnodu, O., Awuonda, B., Chirande, L., *et. al*… (2025). The ASH consa consortium on newborn screening in Africa for sickle cell disease: *Interim* updates of progress in screening, follow-up and supporting initiatives. Blood, Vol. 146 (1). Doi:10.1182/blood-2025-944.

Abstract

Introduction: Children born with sickle cell disease (SCD) in sub-Saharan Africa (SSA) are at >50% risk for under age 5 mortality (U5M). To demonstrate whether newborn SCD screening in SSA and early entry into standard care will lower rates of U5M, the American Society of Hematology (ASH) established the Consortium on Newborn Screening in Africa (CONSA) in 10

sites in 7 countries: Ghana, Kenya, Liberia, Nigeria, Tanzania, Uganda and Zambia. The hypothesis is that early infant SCD screening and entry into standard continuous care will reduce U5M compared to historical estimates. Primary objectives are to determine: a) the population-based birth incidence of SCD; and b) effectiveness of early standardized care for preventing U5M consortium-wide at each country's site(s). Secondary objectives are to: a) establish SCD newborn screening programs and early intervention programs; and b) assess implementation and sustainability. **Methods:** CONSA is a multi-country health intervention program for centralized in-country newborn screening for SCD laboratory analysis of dried bloodspots, with enrollment of infants with SCD into early, continuous standardized care. Additional program needs have been identified, described here. **Results:** This report presents interim data on screening and clinical follow-up, highlighting several key initiatives developed to strengthen the CONSA program, which was launched in 2020. To date, results from 158,736 screened babies revealed 2201 (1.39%), with SCD, 25708 (16.20%) with S and 2531 (1.59%) C trait, and 1814 (1.14%) with another variant. Of those with screening results indicative of SCD, 693 underwent confirmatory testing, which established the diagnosis in 624 individuals (90%). To date, 847 (38.5%) have had an initial documented SCD clinical visit at a CONSA site. Others are receiving care at non-CONSA sites. Several initiatives are supporting CONSA, some through external resources: Screening and diagnostic capacity: Collaboration with a global technical source and in-country distributors has established networks to procure and distribute laboratory supplies, and provides technical support for laboratory guidance, training and troubleshooting to enhance laboratory capacity on isoelectric focusing using dried bloodspots and interpreting results. Sites were provided with supplies of the HemotypeSC device for rapid point-of-care diagnostic confirmation. Digital Health: A CONSA mobile phone app was created to support digital data collection with delayed cloud upload to the central database. Text messages are sent to families of infants with results of non-abnormal hemoglobin, reducing notification workload for data managers and nursing staff. Text messages are sent to affected families to remind them of follow-up visits. Health Education Initiative: Training with doctors, nurses, community health workers (CHWs), and other allied health professionals on SCD diagnosis and care has created networks of healthcare professionals for children living with SCD. More than 1,800 healthcare providers have been trained, with substantial pre- vs. post-test improvement. Improving clinical follow-up and retention in care: CONSA sites are partnering with local pediatric clinics to provide care, with referral to secondary or tertiary care as needed. The new CHW Initiative aims to support families of affected infants to increase documented visits for confirmatory diagnosis, enrollment and retention in care. Enhancing access to hydroxyurea. Sustainability: Measures to increase public awareness and reduce the stigma of SCD are underway to enhance in-country advocacy. CONSA country leaders are supported in developing key messages and strategies to engage local and national government leadership to promote their SCD efforts. Small grants are being provided through contracts with local community-based organizations to support community engagement and SCD advocacy at CONSA sites. Social media outreach on SCD is being piloted to improve public awareness, specifically through promotional videos developed by musical artists collaborating with health education groups, distributed via popular global apps generally aimed at adolescents and young adults. **Conclusions:** Newborn screening encompasses a program beyond a test. Much progress has been

made by the CONSA program that is tailored to local SSA strengths. The program is supported by several key initiatives to ensure effectiveness and sustainability.

505. Nondo, R.S., Machumi, F., Kikoti, I.A., *et al*... (2025). Antimycobacterial and Gas Chromatography-Mass Spectrometry Profiles of Cassia auriculata, Hallea stipulosa, Euphorbia nyikae, and Albizia anthelmintica. *Tropical Journal of Natural Product Research*, Vol. 9(1). Doi:10.26538/tjnpr/v9i1.6.

Abstract

Background: Article history: Received 02 October 2024, Revised 03 December 2024, Accepted 29 December 2024, published online 01 February 2025 Cassia auriculata (Senna auriculata), Hallea stipulosa, and Albizia anthelmintica are among the sources of herbal remedies used to treat tuberculosis and its related symptoms. However, the literature has limited information on the anti-mycobacterial properties of various parts of these plants. This study assessed different parts of C. auriculata, H. stipulosa, E. nyikae, and A. anthelmintica for anti-mycobacterial activity and the phytochemical profiles of the active extracts. Dry powdered plant materials were soaked in 95% ethanol and boiled in distilled water for ethanolic and aqueous extractions, respectively. Extracts were dried by vacuum rotary evaporation and freeze-drying. Antimycobacterial activity against Mycobacterium indicus Pranii (MIP) and Mycobacterium madagascariense (MM) was assessed by the microdilution method, and data were presented as mean ± standard deviations. Phytochemical analysis of the active extracts was done using Gas Chromatography coupled with Mass Spectrometry (GC-MS). The results revealed that C. auriculata aqueous and ethanolic extracts exhibited anti-mycobacterial properties against MM and MIP, while H. Stipulosa, E. nyikae, and A. anthelmintica extracts were inactive. The ethanolic extracts of C. auriculata leaves, flowers, and stem wood showed the highest activity (MIC = 156.25 µg/mL) against MM. The GC-MS showed seven most abundant compounds in different extracts of C. auriculata, including 2,4-dimethylheptane (1), caryophyllene (2), 7-isopropyl-1,4dimethyl-1R,2,3,3aS,6,8aS-hexahydroazulene (3), resorcinol (4), α.-methylmannofuranoside (5), 3-O-methyl-D-glucose (6), and hexatriacontane (7). The activity of caryophyllene and resorcinol against M. tuberculosis has been previously reported. Therefore, the findings of anti-mycobacterial and phytochemical profiles obtained from this study support the traditional use of C. auriculata to manage tuberculosis.

506. Nondo, R.S., Machumi, F., Moyo, A.A, *et al*... (2025). Chemical Constituents and Antifungal Potential of Combined Essential Oils of the Leaves of Coleus barbatus and Corymbia citriodora Growing in Tanzania against Skin Fungal Pathogens. *Tropical Journal of Natural Product Research*, Vol. *9*(5). Doi:10.26538/tjnpr/v9i5.3.

Abstract

Background: New antifungal agents are required to address the challenges of treating skin fungal infections. Coleus barbatus and Corymbia citriodora are used traditionally to treat skin fungal infections. The antifungal efficacy of essential oils (EOs) of these plants against fungal pathogens has been reported; however, there is no report on the antifungal efficacy of their combination.

Objective: This study aimed to determine the chemical compositions and antifungal activity of the combined EOs of the leaves of C. barbatus and C. citriodora from Tanzania. The EOs were extracted by steam distillation and compounds were analyzed by Gas Chromatography-Mass Spectrometry (GC-MS). Antifungal activity against Aspergillus niger, Candida albicans, Candida tropicalis, Candida glabrata, Candida krusei, Trichophyton interdigitale, Trichophyton rubrum, and Microsporum gypseum was assessed using agar-well diffusion method. Means of inhibition zone diameters of different treatments of EOs were compared by One-way ANOVA and Tukey's post-hoc test. Major components of C. barbatus EO were camphor (17.83%), 1,3,8-p-menthatriene (13.57%), thymol (10.43%), and camphene (10.18%). The major phytoconstituents of C. citriodora EO were (1R,2R,5S)-2-isopropenyl-5-methylcyclohexanol (p-menth-8-en-3-ol) (75.43%) and (1S,2R,5R)- 2-(2-Hydroxypropan-2-yl)-5-methylcyclohexanol (5.92%). The C. barbatus EO was more active against C. tropicalis, C. albicans clinical isolates, and M. gypseum while C. citriodora EO was more active against C. albicans 23Q (NR-29341) and T. rubrum. The EOs of both plants exhibited similar activity against A. niger and T. interdigitale. Combinations of the EOs improved activity against dermatophytes and Candida species; therefore, further studies are recommended to investigate the antifungal efficacy of combined C. barbatus and C. citriodora EOs.

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507. Nuss, S., Nakku, D., Pandey, A., *et al*… (2025). Otolaryngology–Head and Neck Surgery Training and Service Delivery: *An International* Survey, Vol. 10(1). Doi:10.1002/lio2.70096

Abstract

Importance: Highlighting the global disparities in otolaryngology training and, ultimately, service delivery, emphasizing the need for equitable access to training resources and programs. **Objective:** To describe the relationship between the quality, content, and location of otolaryngology–head and neck surgery training and education and the resulting impact on the delivery of otolaryngology care globally. **Design:** An online cross-sectional survey to otolaryngologists, gathering information on their training and education experiences, and factors influencing their choice of training location and practice. **Setting:** The online survey was available in multiple languages, distributed via national and international professional otolaryngology societies, snowballing and social media. **Participants:** The respondents were practicing otolaryngologists representing all seven World Health Organization regions. **Exposures:** World Bank income groups classification. **Main Outcomes and Measures:** Our expected outcome was that subspecialty training and access to educational resources were significantly readily available to respondents from high-income countries, leading to more confidence in performing complex procedures post training. **Results:** A total of 91 participants were included in the analysis, with 47 (52%) practicing in high-income countries and 44 (48%) in low- and middle-income countries. Sixty-one participants (67%) were male. Subspecialty training and access to educational resources were significantly less available in low- and middle-income countries, leading to lower confidence among physicians in low- and middle-income countries in performing complex procedures. High-income country respondents reported better access to diverse training resources and felt more prepared for a broader range of procedures. **Conclusion and Relevance:** Significant disparities exist in OHNS training resources

and subspecialty training opportunities between high- and low-middle-income countries. There is a critical need to integrate complementary training and educational modalities into local systems. Addressing the shortage of educational resources and promoting open-access initiatives in low- and middle-income countries are essential steps toward enhancing surgical education and improving global otolaryngology healthcare outcomes.

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508. Nyamhanga, T., Kapinga, O., Muro, B.A., *et al*… (2025). Factors associated with female genital mutilation/cutting in Tanzania: insights from Tanzania demographic and health survey 2022. *BMC Women's Health,* Vol. 25(415). Doi:10.1186/s12905-025-03965-

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Abstract

Background: Globally, female genital mutilation (FGM) remains a significant public health concern. The practice is disproportionately high in African countries. In Tanzania, FGM poses serious health risks to women, girls, and children. However, there is limited empirical literature on the factors associated with FGM in Tanzania. This study intended to fill the gap. **Methods:** In this study, we analysed secondary data from a cross-sectional survey, involving a weighted sample of 7,678 women aged 15–49 from the 2022 Tanzania Demographic and Health Survey (TDHS). In this study, the binary dependent variable indicates whether the respondent is mutilated or not mutilated, while the independent variables include various demographic characteristics of women, such as age, education level, socioeconomic status, and region of residence. Bivariate and multivariable logistic regression analyses were conducted. A threshold of p-value < 0.05 at 95% Confidence Interval (CI) was used to determine a statistically significant association. **Results:** The prevalence of FGM in Tanzania is 8.2%, and types I and II (a cut with or without removal of flesh) were the dominant types of FGM practice by 89.2%. After controlling for other variables, higher odds of being mutilated was reported in; older ages 45–49 years (adjusted Odds Ratio(aOR));3.09, 95%CI: 1.72, 5.54), in rural areas (aOR;2.30, 95%CI:1.4,3.6), in women in unions (aOR;1.60, 95%CI:1.20,2.10), in Northern zone (aOR;9.10, 95%CI: 4.60, 17.80), those who ever heard about FGM had 2.27 times (aOR; 2.27, 95%CI: 0.82, 6.29), those who said FGM required by religion had 8.3 times (aOR; 8.30, 95%CI: 4.30,16.03), those who supported FGM had 5.29 times (aOR; 5.29, 95%CI: 2.69, 10.40) higher odds of reporting having undergone FGM compared to those who said the practice should be stopped. Conversely, lower odds of experiencing FGM was reported in women with at least secondary education (aOR;0.40, 95%CI:0.20,0.60), those from the richest households (aOR;0.40, 95%CI: 0.20, 0.60), and those who said distance to a health facility was not a big problem (aOR;0.70, 95%CI: 0.50, 0.90). **Conclusion:** Our study found that the prevalence of FGM in Tanzania is 8.2%. The factors associated with experiencing FGM included women's socio-demographic factors like older age, rural residency, lower or no education, poorest wealth quintile, supporting FGM to continue, and being in unions. This calls for collaborative efforts between the government and other stakeholders to design targeted interventions as ending FGM requires a multisectoral approach addressing aforementioned determinants across multiple levels, including education and wealth creation programs, particularly to uneducated and poorest women from rural areas. **Keywords:** Female genital mutilation, Women DHS, Tanzania.

509. Nyamhanga, T., Luoga, P. (2025). Factors Associated with Teenage Pregnancy in Tanzania: Analysis of the 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey. *Int. J. Public Health,* Vol. 70.Doi:10.3389/ijph.2025.1608146.

Abstract

Objective: Few studies on teenage pregnancy in Tanzania have used a nationally representative sample. This study sought to determine the prevalence and factors associated with teenage pregnancy in Tanzania. **Methods:** We conducted a secondary data analysis of 3,083 teenagers aged 15–19 years drawn from the 2022 Tanzania Demographic and Health Survey. **Results:** After controlling for other covariates, we found that teenagers aged 18–19 years (AOR = 4.5, 95% CI:3.3, 6.1), those who said that getting permission to access healthcare was not a big problem (AOR = 2.7, 95% CI:1.4, 5.3), and those from the Southern zone (AOR = 2.4, 95% CI: 1.5, 3.9), had higher odds of reporting ever having been pregnant. Those with secondary or higher education levels (AOR = 0.3, 95% CI: 0.19, 0.39) and those who married after age 15 (AOR = 0.4, 95% CI: 0.2, 0.8), had lower odds of reporting ever having been pregnant. **Conclusion:** This study highlights the significant factors associated with teenage pregnancy among teenagers aged 15–19 years in Tanzania. The education system should facilitate the majority of girls obtaining at least a secondary level of education. Teenager-friendly sexual and reproductive health services need to prioritize older teenagers, with lower education levels, and those from poor families. **Keywords:** Tanzania, teenage pregnancy, adolescent girls, TDHS, age 15–19 years.

510. Nyamhanga, T., Luoga, P., Paulo, H., *et al*... (2025). Factors Associated with the Uptake of Clinical Breast Examination for Early Detection of Breast Cancer: Interaction Analysis of the 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey. *BMJ Public Health,* Vol. 3(2). Doi:10.1136/bmjph-2024-002128.

Abstract

Background: In Tanzania, few studies have identified predictors of clinical breast examination (CBE). To the best of our knowledge, no published study has comprehensively identified factors associated with the uptake of CBE from a nationally representative sample. Therefore, this study fills this gap by conducting a secondary analysis of data from the Tanzania Demographic and Health Survey 2022 and the Malaria Indicator Survey. We answered this research question: What are the factors associated with the uptake of CBE for early detection of breast cancer among Tanzanian women aged 15–49 years? **Methods:** We performed descriptive analysis by calculating weighted frequencies and percentages, which enabled us to determine the prevalence of CBE uptake across various characteristics of the study participants. We used the 'svy' command in Stata to assign sample weights and adjust for clustering effects and sample stratification. A multivariate binary logistic regression model was used to determine the statistical significance and strength of the influence of each independent variable on CBE uptake, after controlling for other explanatory variables. **Results:** The study has shown that women with low incomes, who are unemployed and

those without health insurance have lower odds of undergoing CBE. The finding that there is an interaction between age and residence, as well as between age and education, in relation to the outcome variable (CBE), suggests that the relationship between age and CBE may be influenced differently based on where someone lives or their level of education. This could point to unique barriers or influences in different age groups, depending on their environment or educational background. **Conclusion:** The overall uptake of CBE among women aged 15–49 years in Tanzania is very low (5%). There is a need to urgently implement targeted breast health awareness education programmes at all health system levels.

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511. Nyamhanga, T., Metta, E., Mohamed, H., *et. al*… (2025). "We Must Wash the Dead Body of Our Beloved Mother to Protect Her Privacy; If We Don't, It Is as If She Has Died Childless": Qualitative Exploration of Meanings Underlying Sociocultural Practices Which May Escalate the Transmission of Ebola Virus Disease in Tanzania's Border Regions. *Advances in Public Health*, Vol. 2025(1). Doi: 10.1155/adph/8258304.

Abstract

Background: Despite bordering Ebola virus disease (EVD)-affected countries, Tanzania has limited local knowledge to inform EVD preparedness and response. Understanding risky sociocultural practices is one step, and getting to know the meanings linked to adherence to such practices is a further step toward better preparedness and response to the EVD pandemic. **Objective:** The main objective of this article was to explore the meanings that people associate with EVD-risky practices of taking care of the sick and funeral rituals. **Methods:** We conducted a brief ethnographic analysis to examine the cultural customs and their underlying meanings that could contribute to the spread of EVD in Tanzania in the event of an outbreak. The study was carried out in Kigoma, Mwanza, Songwe, Kagera, and Zanzibar. To collect information about the meanings behind risky funeral and sick-care practices, we conducted focus group discussions (FGDs) and in-depth interviews. The study's findings were analyzed using a thematic analysis. **Results:** This study revealed EVD's risky practices and the meanings behind them. In the unprotected caring of a patient, the study found two main meanings: refraining from causing desperation to the patient and avoiding being perceived as stigmatizing. Another EVD-risky practice was found to be taking and/or keeping the dead body at home for a while before burial. The reasons for this practice were found to be a demonstration of love and respect to the deceased. The study also identified the culture of bathing the dead body in preparation for burial as a major EVD risky practice. The meanings underlying this practice were found to be religious conviction, showing love to the deceased, and a gendered demonstration of love and respect to the deceased. **Conclusion:** This study has shed light on why people take care of the sick and participate in funerals in a manner that may escalate the transmission of EVD if the outbreak occurs in Tanzania. The identified meanings are key to developing effective EVD preparedness interventions.

512. Nyamsaya, S., Mafwiri, M. (2025). Acute Depression Leading to a Suicide Attempt Following Successful Cataract Surgery that Restored Vision in a Legally Blind Patient: A Case Report from Tanzania. *American Journal of Ophthalmology Case Reports*, Vol. 35. Doi: 10.1016/j.ajoc.2025.102405.

Abstract

Background: Cataract surgery is a common and effective procedure for restoring vision, yet it can sometimes lead to unexpected psychological challenges, particularly in legally blind patients. This case report highlights the need for pre- and postoperative psychological assessment and support for some cataract patients to prevent potential mental health crises that may arise if they feel abandoned or unsupported after recovering vision. **Observation:** We present a case of a legally blind 72-year-old male who, two weeks after a successful cataract surgery, developed acute depression that culminated in a suicide attempt. The psychological distress was possibly triggered by the sudden withdrawal of family support, leaving the patient feeling abandoned and overwhelmed by the abrupt expectation of independence. **Conclusion:** Despite the success of cataract surgery in restoring vision, some patients may face significant emotional and psychological challenges. This case underscores the importance of holistic patient care, including mental health evaluations and psychosocial support, particularly for legally blind patients undergoing visual rehabilitation.

513. Nyamuryekung, K.K., Kesale, A.M., Kagoma, P., Kihulya., *et al*… (2025). Leveraging Community Engagement for Strengthening Primary Health Care Services: Lessons from the 1st International Primary Health Care *Conference*, Tanzania. *The Pan African Medical Journal*, Vol. 52(3). Doi: 10.11604/pamj.supp.2025.52.1.46898.

Abstract

Introduction: Achieving Universal Health Coverage (UHC) and Sustainable Development Goals (SDGs) relies heavily on effective and integrated Primary Health Care (PHC). Community engagement is crucial for strengthening PHC and addressing gaps in access to quality care, coverage, and financial protection. **Methods:** data were collected from the International PHC conference in Tanzania, including keynote addresses, forum discussions, presentation slides, abstracts, recorded speeches, and best practices. Supplementary data were obtained through a narrative desk review of existing policies and guidelines for Community-Based Health Programs in Tanzania. Content analysis and narrative synthesis of collected materials were conducted to extract current practices, lessons, policy implications, recommendations, and implementation contexts. **Results:** the analysis highlighted five community engagement levers for maximizing health services in PHC settings. First, integrated community health programs enhance outcomes by addressing multiple health needs and fostering stakeholder collaboration. Second, capacitating and engaging Community Health Workers (CHWs) through training, resource provision, and supportive supervision is essential for effective healthcare delivery, especially in underserved areas. Third, community participation, including comprehensive education and feedback mechanisms, ensures effective and sustainable health interventions. Fourth, partnerships between

healthcare providers and community-based organizations (CBOs) are crucial for comprehensive service delivery. Fifth, promoting organizational capacity and gender diversity in decision-making platforms is vital for responsive health services. **Conclusion:** the identified community engagement levers were shown to collectively boost service uptake, referral completion and equity in Tanzanian PHC, demonstrating that their alignment to context can fast-track progress towards Universal Health Coverage.

514. Nyamuryekung'e, K., Mbawalla, H., Mlangwa, M., *et al*... (2025). Adults' dental caries burden through the DMFT index: Tanzanian national pathfinder survey. *BMC Oral Health*, Vol. *25*(1). Doi:10.1186/s12903-025-06233-6.

Abstract

Background: Dental caries remains the most prevalent chronic disease globally. The DMFT (Decayed, Missing, and Filled Teeth) index is a key metric in oral epidemiology to quantify the prevalence and severity of dental caries. This study aims to assess the dental caries burden among adults in mainland Tanzania using the DMFT index. **Methods:** A national pathfinder survey was conducted using a cross-sectional design across 14 districts in 13 regions of mainland Tanzania. Site selection followed the World Health Organization's (WHO) basic oral health survey methods, employing a modified stratified-cluster sampling approach. Adult participants completed electronic questionnaires prior to clinical dental examinations. Questionnaires gathered sociodemographic data, self-rated dentition status, tooth brushing practices, whereas clinical dental examination assessed dental caries status using the DMFT criteria. All data collection and dental examinations adhered to WHO standard criteria. Data were analysed using SPSS version 23. Frequencies were calculated to determine the proportions of participants' mean DMFT components. Bivariate associations were analysed using Mann Whitney U-test and Kruskal Wallis to compare DMFT components with sociodemographic characteristics and self-rated dentition status, whereas logistic regression was utilised for multivariate analysis. **Results:** The survey included 1,386 participants aged 30–34, 35–44, and 50+, with 713 females (51.4%). Nearly half of the participants (49.1%) were aged 50 years or older. The mean DMFT score was 4.63 (SD 5.4), with 76.6% experiencing dental caries. The Missing teeth component accounted for the largest portion of the mean DMFT (52.4%), followed by the Decayed teeth component (45.8%). Only 3.5% of participants with dental caries had tooth fillings. Higher median DMFT scores were observed among females, participants aged 50 or more, with lowest education levels and poor self-rated dentition status. Increased DMFT scores were linked to brushing less than once daily ($p < 0.05$) and not using a toothbrush daily ($p < 0.01$). **Conclusion:** The high dental caries prevalence (76.6%) and sociodemographic disparities highlight the need for an integrated approach combining preventive measures, oral health promotion and improved access to dental services to address this challenge effectively in Tanzania.

515. Nyongole, O., Munishi, C., Kimu, N., *et al*… (2025). Challenges of data quality for the management of prostate cancer in Tanzania: A hurdle towards improving the quality of service. *PLOS Global Public Health*, Vol. *5*(12). Doi: 10.1371/journal.pgph.0005579

Abstract

Background: Data quality in clinical notes is crucial for providing quality prostate cancer services, especially in countries with weak health systems and a growing burden of non-communicable diseases like prostate cancer. Poor data quality can lead to inefficient services, delayed treatment, and compromised patient outcomes. The objective of this study was to examine the quality of clinical notes for prostate cancer patients treated at five tertiary hospitals in Tanzania from January to December 2022. A sequential mixed-method approach was employed, combining quantitative and qualitative data collection. Patients' level information from electronic and manual clinical notes were extracted and reviewed. In-depth interviews were conducted among 25 healthcare providers to explore data quality challenges in clinical notes. Quantitative data analysis used descriptive analysis via SPSS 27 software to determine data completeness and accuracy. In-depth interviews were conducted among 25 healthcare providers to explore data quality challenges. Qualitative data analysis utilized thematic analysis with hybrid inductive and deductive reasoning via NVivo 14 software. Clinical notes for prostate cancer management had poor quality. While the overall accuracy of documented variables was high at 1,494 (99.4%), documentation of key clinical variables was low; specifically, the clinical stage was documented in only 1,052 (70.0%) clinical notes, and the Gleason score in 923 (61.4%). Age, clinical presentation, and type of treatment showed high completeness. Themes established included lack of knowledge on data quality, poor integration of data, shortage of human resources for health, lack of supervision and the coexistence of electronic and manual record systems. The Health Information Management System and hospital-based cancer registries were not integrated. Documentation rates for clinical stage and Gleason score in the clinical notes of patients with prostate cancer were low in Tanzania. Improving the quality of clinical notes requires collaborative efforts among stakeholders focusing on structural reforms and capacity building of personnel.

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516. Nyongole, O.V., Sirili, N., Mwakilasa, M.T., *et. al*… (2025). Optimising healthcare workforce training and deployment: qualitative experiences from stakeholders in Tanzania. *BMJ Open*, Vol. 15(11). Doi: 10.1136/ bmjopen-2024-092537.

Abstract

Objective: To explore the experiences of different stakeholders on the balance of package training and deployment of highly skilled Human Resources for Health for specialised services in Tanzania. **Design:** An exploratory qualitative case study was used as part of a larger tracer study conducted by Muhimbili University of Health and Allied Sciences (MUHAS) for its postgraduate programmes being a requirement for quality assurance. Semi-structured interview guides were used for in-depth interviews (IDIs) and focus group discussions (FGDs). Qualitative content analysis was adopted to analyse the data. **Setting:** The trace study was carried out in all seven geopolitical zones of the Tanzania mainland and Unguja in Zanzibar. **Participants:** We conducted 14 FGDs and 301 IDIs. Participants included alumni, immediate supervisors at employment sites, MUHAS faculty, continuing students at MUHAS and management of professional councils in Tanzania. **Results:** Key findings revealed variations in demands and recognition within the scheme of services, even after registration by professional councils. Five main themes emerged from the qualitative interviews: Package training to improve service provision, Unprofessional

collegial relationships or issues related to professionalism within interdisciplinary teams, Silence of scheme services on super specialisation in the medical cadre, Silence of scheme services on specialisation in the nursing cadre, Integrated scheme of services for specialties in pharmacy. **Conclusion:** The findings highlight the demand for specialised training, challenges with professionalism and inconsistencies in the recognition and remuneration of specialists across medical, nursing and pharmacy cadres within existing service schemes. There is a need for harmonisation between specialisation/super specialisation and the scheme of services. This harmonisation is crucial to ensure the provision of quality healthcare services. Furthermore, harmonisation requires multistakeholder engagement to realise universal health coverage strategies.

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517. O'Marr, J.M., Rodarte, P., Haonga, B., *et al*... (2025). A Cost-Effectiveness Analysis of Intramedullary Nailing Versus External Fixation for Open Tibial Fractures in Tanzania. *JBJS Open Access*, Vol. 10(1). Doi: 10.2106/JBJS.OA.24.00006.

Abstract

Background: Open tibial fractures are a cause of substantial orthopaedic morbidity in low- and middle-income countries. These injuries represent a substantial cost burden to both individual patients and society because of their high propensity for complications, such as infection, nonunion, and malunion. External fixation and intramedullary (IM) nailing are both utilized for definitive treatment of open tibial fractures, but given the differences in cost and lack of clear superiority of intramedullary nailing, cost-effectiveness becomes important to consider in low- and middle-income countries. The present study aimed to examine the cost-effectiveness of IM nailing versus external fixation within Tanzania. **Methods:** This study utilized data from a randomized controlled trial conducted at a single tertiary hospital in Dar es Salaam, Tanzania. Direct cost data were collected via an internal audit of operating costs and hospital staff time. Indirect costs data were collected from patients in a long-term follow-up study assessing total lost work. A Markov model was utilized to run the cost-effectiveness simulations. The primary outcome was the incremental cost-effectiveness ratio (ICER) over a lifetime time horizon. Both the payer and societal perspectives were considered. To account for uncertainty, both 1-way and probabilistic sensitivity analyses were performed. **Results:** From the payer perspective, the cost of external fixation ($396 USD) was lower than that of IM nailing ($529), primarily because of shorter operative times. However, IM nailing was associated with more quality-adjusted life-years (QALYs). From the payer perspective, the ICER was $499 per QALY with a donated nail and $701 per QALY with a purchased locally available nail. From the societal perspective, the ICER was lower among patients undergoing IM nailing, at $70 per QALY, largely because of shorter recovery times. **Conclusions:** From both the payer and the societal perspective, IM nailing is considered highly cost-effective on the basis of the World Health Organization willingness-to-pay thresholds. This finding was consistent whether the IM nail was donated or purchased from local suppliers. These results are likely generalizable to other tertiary referral centers in low- and middle-income countries.

518. Morrell, L., Tungu, M., Achola, C., *et al*… (2025). Diagnosing Burkitt Lymphoma in Sub-Saharan Africa by Sequencing of Circulating Tumor DNA: A Comparative Microcosting Study. Vol. 48. Doi: 10.1016/j.vhri.2025.101113.

Abstract

Objectives: Determining the cost of diagnosis of Burkitt lymphoma by DNA sequencing from a blood sample, compared with the current histopathology. Estimating future sequencing costs at increased scale and exploring the effect of positivity rate on per-case cost. **Methods:** We conducted a microcosting of both diagnostics. Resource use information was derived from standard operating procedures and interviews with staff. Unit cost data were from salary scales, purchase records, and publicly available prices. Costs were collected during 2021 and 2022, in the currency of purchase, and converted to common year (2024) and currency (US dollar [$]), with a discount rate of 5%. For increased scale, we assumed simple scaling up of current sample preparation and higher-capacity sequencing machines running at least once a week to maintain turnaround times. **Results:** We estimated a cost of $185.01 per patient for histopathology, with the main cost drivers being staining ($87.20, largely immunohistochemistry consumables, including $34.52 for antibodies) and the biopsy procedure ($72.29). The cost of the sequencing-based diagnostic was $710.15 at current throughput, with the largest contribution from the sequencing step because of the cost of sequencing reagents ($175.48 per sample). Costs are sensitive to throughput, reagent costs, and the efficiency of utilization of equipment. At the current prevalence, the cost per positive case is 2-fold higher at a positivity rate of 25% compared with 75%. **Conclusions:** With the current technology and throughput, sequencing is likely to increase the cost of diagnosis compared with current pathology. Costs will reduce with increased scale, which requires establishing a local reagent supply and maintenance capability. ***Keywords:*** *Burkitt lymphoma, circulating tumor DNA diagnosis, microcostingsub-Saharan Africa.*

519. Ohemu, G. P., Read, C., Onwukwe, C. D., *et al*… (2025). Educate, Advocate, Act Now: a sustainable approach to combating antimicrobial resistance TODAY. *Journal of Antimicrobial Chemotherapy*, Vol. 80(3). Doi:10.1093/jac/dkae478.

Abstract

Antimicrobial resistance (AMR) poses a great challenge to health systems all over the world. It is exacerbated by the abuse, misuse and overuse of antimicrobials in humans, animals, plants and the environment. This viewpoint emphasizes the critical need to address the challenges of AMR through an integrated, long-term approach that focuses on education, advocacy and collective action. This article stresses that the fight against AMR is not a battle for governments and scientists alone but requires engagement at every level. The article concludes that we can reduce the spread of AMR by exploring the potential of education, advocacy and collective action.

520. Olaghere, J., Williams, D.A., Farra, J., *et al*… (2025). Scientific Advancements in Gene Therapies: Opportunities for Global Regulatory Convergence. *Biomedicines,* Vol. 13(3). Doi: 10.3390/biomedicines13030758.

Abstract

On 4 September 024, the Reagan-Udall Foundation for the FDA (FDA Foundation) in collaboration with the Food and Drug Administration (FDA) and the Gates Foundation hosted a workshop titled "Scientific Advancements in Gene Therapies: Opportunities for Global Regulatory Convergence". The event brought together a diverse group of experts, including international regulatory bodies, regulated industries, healthcare professionals, patients, academic researchers, and global health advocates, to discuss the rapid advancements in gene therapy and the pressing need for equitable access in low-and middle-income countries (LMICs), with sickle cell disease (SCD) serving as the model disorder for the discussions. Although there has been significant progress in gene therapy, such as breakthroughs in clustered regularly interspaced short palindromic repeats **(**CRISPR)-based technologies and FDA-approved therapies, access **to** these therapies remains limited in under-resourced regions. The workshop addressed critical challenges, including the high cost of therapies, regulatory gaps and barriers, and ethical concerns regarding informed consent and public engagement in LMICs. This paper highlights the critical discussion points from the workshop with a focus on exploring strategies for global regulatory convergence, the role of international collaborations, and the potential pathways to making gene therapies affordable and accessible to all. ***Keywords:*** *gene therapy; low-and middle-income countries (LMICs); sickle cell disease (SCD); clustered regularly interspaced short palindromic repeats (CRISPR); chimeric antigen receptor T cell (CAR T cell).*

521. Olirk, B., Mamuya, S., Mosha, I., *et al*… (2025). Occupational pesticide exposure risks and gendered experiences among women in horticultural farms in Northern Tanzania International *Journal of Environmental Research and Public Health*, Vol. 22(10). Doi:10.3390/ijerph22101529.

Abstract

Background: Over the past decades, women's participation in horticulture has become increasingly apparent across Africa. Women perform physically demanding agricultural work on family farms, as hired laborers, or as paid workers on other farms. To increase yield and protect crops, pesticides are used, yet the health risks faced by these women remain under-researched. This

qualitative exploratory case study, conducted in 2023 in four villages in northern Tanzania, explored pesticide exposure risks, gender roles, and awareness among women working on horticultural farms. Data were collected through four focus group discussions with 46 women (mean age, 39 years; mean work experience, 10 years). Data was transcribed and thematically analyzed. Six themes emerged: gender division of labor, limited training and awareness, adverse health effects, unsafe storage and disposal practices, inadequate protective measures, and resilience. Although pesticide spraying was typically performed by men, poor or unmarried women also undertook this task. Women had limited access to training on safe pesticide handling, and protective gear was rarely used. Despite awareness of potential health risks, economic necessity and prevailing gender norms compelled continued exposure. Gender-sensitive interventions, including targeted occupational health education and promotion of safer agricultural practices, are urgently needed to reduce pesticide-related health effects among women. ***Keywords:*** *gender roles; horticulture; pesticide exposure; Tanzania; women*

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522. Olirk, B.T., Mamuya, S.H., Tjalvin, G., *et al*… (2025). 56 Umbilical cord plasma cholinesterase activity and birth weight in babies delivered by mothers engaged in horticulture activities in Northern Tanzania. Vol. 82(1). Doi:10.1136/oemed-2024-EPICOHabstracts.5.

Abstract

Introduction: Objective. Little is known about potential adverse health effects on newborn babies caused by prenatal exposure to pesticides, for instance, organophosphates that have cholinesterase-inhibiting effects. We aimed to investigate whether maternal exposure to pesticides during pregnancy affected umbilical cord plasma cholinesterase activity and birth weight in delivered babies among women engaged in horticulture activities in Northern Tanzania. **Material and Methods:** We investigated 250 newborns of women anticipated to be exposed to pesticides or actively involved in horticulture (occupationally exposed) and 250 newborns of women not involved in horticultural activities (not occupationally exposed) from Northern Tanzania. Based on interviews, using a questionnaire, data on occupational history and pesticide exposure from pregnant women were collected. Additionally, data on birth weight was collected from the medical records, and cord blood samples were collected at delivery. Cholinesterase activity in the umbilical cord plasma was assessed by plasma cholinesterase assay kits (Model 470 EQM Research, Cincinnati). Statistical analysis was done by SPSS version 23, including comparisons of groups by the use of t-tests and correlation tests; p-values < 0.05 were considered significant. **Results:** Both mean cholinesterase activity in umbilical cord plasma (1.338 vs 1.916, $p<0.0001$) and mean birth weight (2.82 vs 3.27, $p<0.0001$) were lower in newborn babies delivered by occupationally exposed mothers compared to babies from mothers with no occupational exposure. There was a positive correlation between plasma cholinesterase levels and birth weight of the babies ($r=0.553$, $p<0.0001$). **Conclusions:** Babies delivered by mothers exposed to pesticides or actively involved in horticulture during pregnancy had lower plasma cholinesterase activity in their umbilical cord plasma and lower birth weight than babies delivered by mothers not involved in horticultural activities. This raises concern for reproductive health and prenatal exposure in areas where pesticides like organophosphates are widely used. Acknowledgement: We are grateful to NORAD

through the NORHED program (Norwegian Program for Capacity Development in Higher Education and Research for Development) via the NORHED II SAFE WORKERS PROJECT for funding this project. We also appreciate the support of the management of the Hospitals and pregnant women who spared their precious time to participate in our study.

523. Decker, E.C., Adams, M.W., Oswald, W.E., *et al*… (2025). Cost-effectiveness of adding measurement of Chlamydia trachomatis infection and serology to trachoma prevalence surveys in Tanzania and Mozambique. *PLOS Neglected Tropical Diseases,* Vol. 19(7). Doi: 10.1371/journal.pntd.0013257.

Abstract

Background: Accurate methods to measure trachoma prevalence are critical to monitor progress and guide mass drug administration as countries near elimination. Currently, countries conduct trachoma prevalence surveys via clinical examination using the simplified trachoma grading system. Grading can have reduced accuracy in low-prevalence settings, potentially resulting in errors. Adding ocular swabbing and Chlamydia trachomatis (Ct) infection testing and dried blood spot (DBS) collection and testing can be more sensitive and specific methods for trachoma identification, with potential cost-saving and information benefits. While previous studies have examined the costs of trachoma prevalence surveys, we present the first costing and cost-effectiveness analysis of enhanced trachoma prevalence surveys with ocular swabs and DBS in addition to grading. **Methodology/Principal findings:** We calculated the incremental financial cost of enhanced trachoma prevalence surveys with swabs, DBS, and grading using expenditure records from four districts in Tanzania and four districts in Mozambique in 2022. In Tanzania, the cost per cluster of an enhanced survey was $2,337.39 compared to $459.75 for a standard survey. In Mozambique, the cost per cluster of an enhanced survey was $2,147.12, compared to $1,381.46 for a standard survey. We calculated the incremental cost-effectiveness ratio for each method, defined as the ratio of incremental cost to additional instances of trachoma indicators identified, and explored variation in cost-effectiveness via sensitivity analyses. Adding swabs, DBS, or both was cost-increasing and more effective at the identification of trachoma indicators than grading alone. In Tanzania, swabs were the most cost-effective method, while DBS was more cost-effective in Mozambique. Swabs and DBS were less cost-effective when combined than individually. The main factor determining cost-effectiveness was sensitivity. **Conclusions/Significance:** Adding swabs or DBS to trachoma prevalence surveys can be viable, cost-effective methods for identifying trachoma indicators. The additional costs are commensurate with additional information that would support elimination efforts.

524. Olirk, B.T., Ngowi, A.V., August, F., *et al*… (2025). Maternal occupation and risk of adverse fetal outcomes in Tanzania: A hospital-based cross-*sectional* study. *Plos one*, Vol. 20(3). Doi: 10.1371/journal.pone.0319653.

Abstract

Background: Women constitute a large proportion of the workforce in today's world. Hazardous working environment conditions for these women pose threat to their reproductive health. Despite efforts to address maternal health in Tanzania, the impact of occupational risks during pregnancy remains unclear. We assessed whether maternal occupation during pregnancy is associated with adverse Foetal outcomes. **Methods:** A cross-sectional study was conducted among 400 self-referred post-delivery women at a referral Hospital in Tanzania. Information on socio-demographic characteristics and maternal occupational characteristics was assessed through the use of a pre-tested questionnaire. Questions on physical demanding work and prolonged standing were obtained from the standardized Musculoskeletal Questionnaire. To assess occupational exposure to chemicals, job titles and task descriptions were linked to a job-exposure-matrix, an expert judgment on exposure to chemicals at the workplace. Information relating to obstetric characteristics and pregnancy outcomes was obtained from the medical files and clinic cards. Data was analyzed by using Statistical Package for Social Sciences (SPSS) version 23. Odds ratios > 1 was considered risk while Odds ratios < 1 was considered protective and P value < 0.05 was considered significant. **Results:** The mean age was 28.0 ± 6.3. Out of 400 post-delivery women studied, 174 (43.5%) were engaged in various occupations. Agriculture (22.4%) was the most prevalent occupation followed by tailoring (19.0%). Relative to the referent group of other occupations, agriculture workers, had higher adjusted odds ratios of congenital malformation (AOR = 4.5, 95% CI; 1.6-12.8) preterm babies (AOR = 2.8, 95% CI; 1.3-7.9), low birth weight (AOR = 3.1, 95% CI; 1.4-8.4) and low Apgar score (AOR = 3.5, 95% CI; 1.3-9.5). Food vendors: low birth weight (AOR = 8.6, 95% CI; 2.7-24.8) and low Apgar score (AOR = 13.5, 95% CI; 4.5-39.4). **Conclusion:** Understanding occupational characteristics and their relation to adverse Foetal outcomes is important to formulate appropriate strategies to promote and protect maternal and infant health at work.

525. Ollomy, F., Msuya, S.E., Todd, J., *et al*… (2025). Trends and factors associated with modern contraceptive use among sexually active female youths in Tanzania, 2004–2022. *BMJ open*, Vol. 15 (10). Doi: 10.1136/bmjopen-2024-096878.

Abstract

Objective: The study aimed to assess the trends and factors associated with modern contraceptive use among female youths (15–24 years) in Tanzania from 2004 to 2022.Design we performed secondary analysis of cross-sectional data from four consecutive Demographic and Health Surveys (DHS) in Tanzania: 2004, 2010, 2015/2016 and 2022.**Setting**: Tanzania. Participants Sexually active female youths (n=8659). **Primary outcome:** The use of any modern contraceptive method, coded as Yes or No. **Results:** The sample had a median age of 21 (IQR 18–22 years), with 63.7% aged 20–24 years. Modern contraceptive use among female youths increased from 24.6% in 2004 to 32.1% in 2022. Consistent across surveys, modern contraceptive use was positively associated

with secondary or higher education level, having one or more live births and engaging in sexual activity within the month preceding the survey. Additionally, adolescents (15–19 years) demonstrated a weak protective association, indicating a reduced likelihood of modern contraceptive use compared with young women (20–24 years). In 2015/2016 and 2022 surveys, primiparous, multiparous and married/cohabiting women were more likely to use modern contraceptives than nulliparous women. **Conclusions:** Modern contraceptive use among female youths increased gradually in Tanzania between 2004 and 2022 Tanzania DHS. To sustain these upward trends and reduce the risk of unwanted pregnancies and sexually transmitted infections, public health policies should consider the factors positively associated with modern contraceptive use, particularly among young women aged 20–24 years, married/cohabiting, who have initiated childbearing and those with high education levels.

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526. Omary, H., Chombo, S., Luoga, P., *et al*… (2025). Towards promoting timely treatment: uncovering the determinants of prompt malaria care seeking behavior among febrile children under-five years in Tanzania. *PloS one*, Vol. 20(4). Doi: 10.1371/journal.pone.0319913.

Abstract

Background: Prompt diagnosis and effective treatment within 24 hours of fever onset is crucial for reducing malaria-related morbidity and mortality in under five children. However, research on the prompt care-seeking behaviors and their determinants in this demographic is limited. This study examined the prevalence of prompt care-seeking behaviors among under five febrile children in Tanzania and the associated determinants. **Methods**: This cross-sectional study analyzed data from the 2022 Tanzania Demographic and Health Survey (TDHS), including a nationally representative and weighted sample of 1,050 under-five children who experienced fever within two weeks prior to the survey. A weighted univariable and multivariable modified Poisson regression model with robust estimator was used to examine the association between prompt care seeking behaviors and explanatory variables, including child and caregivers' factors. **Results:** The prevalence of prompt care seeking for febrile children was 43.2%. Caregivers of female children had 18% less prevalences of seeking prompt care (95% CI 0.68–0.98) compared to caregivers with their male children. Caregivers aged 25–34 and 35–49 years had 36% (95% CI 1.05–1.78) and 61% (95% CI 1.16–2.23) higher prevalences of seeking prompt care for their children respectively, compared to younger caregivers aged 15–24 years. Caregivers with at least primary education had 50% (95% CI 1.12–2.02) higher prevalences of seeking prompt care compared to those with no formal education. Additionally, an increase in one household member was associated with a 3% increase in the prevalence of seeking prompt malaria care (95% CI 1.01–1.05). **Conclusion:** In

Tanzania, female children under five experience delays in care-seeking for malaria, whereas older and more educated caregivers are more likely to seek timely treatment for their children. To enhance health outcomes in this vulnerable group, targeted interventions should prioritize raising awareness among caregivers, particularly younger ones and prompting equitable care seeking to all children regardless of sex.

527. Orfano, A., Cisse, A., Sheng, Z., *et al*… (2025). 95 Assessing *genetic* diversity of the Pfs25 vaccine candidate: Implications for malaria transmission-blocking vaccine in Africa. *Journal of Clinical and Translational Science*, Vol. 9(1).

Abstract

Background: Objectives/goals: Transmission-blocking vaccines hold promise is for malaria elimination by reducing community transmission. But a major challenge that limits the development of efficacious vaccines is the vast genetic diversity of the parasite. This work aims to assess the genetic diversity of the Pfs25 vaccine candidate in complex infections across African countries**. Methods/study population:** We employed next-generation amplicon deep sequencing to identify nonsynonymous single-nucleotide polymorphisms (SNPs) in 194 Plasmodium falciparum samples from four endemic African countries: Senegal, Tanzania, Ghana, and Burkina Faso. The individuals aged between 1 and 74 years, but most of them ranged from 1 to 19 years, and all presented symptomatic P. falciparum infection. The genome amplicon sequencing was analyzed using Geneious software and P. falciparum 3D7 as a reference. The SPNs were called with a minimum coverage of 500bp, and for this work, we used a very sensitive threshold of 1% variant frequency to determine the frequency of SNPs.The identified SNP was threaded to the crystal structure of the Pfs25 protein, which allowed us to predict the novel SNP in the protein or antibody binding. **Results/anticipated**: We identified 26 SNPs, including 24 novel variants, and assessed their population prevalence and variant frequency in complex infections. Notably, five variants were detected in multiple samples (L63V, V143I, S39G, L63P, and E59G), while the remaining 21 were rare variants found in individual samples. Analysis of country-specific prevalence showed varying proportions of mutant alleles, with Ghana exhibiting the highest prevalence (44.6%), followed by Tanzania (12%), Senegal (11.8%), and Burkina Faso (2.7%). Moreover, we categorized SNPs based on their frequency, identifying dominant variants (>25%), and rare variants**. Discussion/ significance of impact:** We identified additional SNPs in the Pfs25 gene beyond those previously reported. However, the majority of these newly discovered variants display low variant frequency and population prevalence. Further research exploring the functional implications of these variations will be important to elucidate their role in malaria transmission

528. Orotta, M., Munseri, P., Massawe, R.V., *et al*… (2025). Hepatitis B virus: Prevalence, vaccination coverage, and immune responses to immunization among healthcare workers at Muhimbili National Hospital. *Plos One*, Vol. 20(4). Doi: 10.1371/journal.pone.0321623.

Abstract

Background: Healthcare workers (HCWs) are at an increased risk of contracting and transmitting the hepatitis B virus (HBV). Vaccination coverage against HBV a cost- effective prevention,

remains low among HCWs in some settings**. Objective:** To determine the prevalence of HBV infection, vaccination coverage, and immune responses to HBV vaccine among HCWs at Muhimbili National Hospital (MNH) in Dar es Salaam. **Methodology:** This cross-sectional study used a proportional probability systematic sampling to recruit HCWs from MNH in Dar es Salaam. A structured questionnaire was used to collect social demographic characteristics, infection prevention and control practices, HBV vaccination status, and reasons for not vaccinating. Five mLs of a peripheral venous sample were obtained from each participant; the sample was used to test for HBV surface antigen, HBV surface antibody, and HBV core antibody for assessing for infection, and vaccine immunity, respectively. A Robust Poisson Regression analysis was used to assess factors associated with not vaccinating. **Results:** The prevalence of HBV infection was 5 (1.2%) among the 415 recruited HCWs. Only 192 (46.3%) HCWs were vaccinated, and 169 (96%) had protective immunity against HBV infection among 176 participants who had received at least two vaccine doses. HCWs who were laboratory scientists (aPR = 2.01, 95% CI (1.35–3.00) and had < 10 years of employment aPR = 1.62, 95% CI (1.04–2.50) were unlikely to vaccinate against HBV. Vaccine unavailability 114 (51.1%), hesitancy 42 (18.8%), time constraints 41 (18.4%), and financial constraints 26 (11.7%) were factors associated with not vaccinating. **Conclusion:** Vaccine coverage against HBV among HCWs at MNH is alarmingly low. Vaccine access, subsidizing costs, and protecting time for vaccination could improve vaccination uptake. Qualitative studies are needed to assess the reasons for vaccine hesitancy among HCWs.

529. Osati, E.F.O., Nagu, T.J., Sangeda, R.Z., *et al*… (2025). Residual cardiopulmonary manifestations following COVID-19: a Tanzanian ambispective study. *BMJ*, Vol. 2(1). Doi:10.1136/bmjph-2024-00208.

Abstract

Introduction: Residual COVID-19 sequelae create a public health concern as they add to the already heavy burden of non-communicable diseases. We set out to investigate the magnitude of residual cardiopulmonary manifestations post-acute COVID-19 and their associated factors in Tanzania. **Methods:** This was an ambispective study conducted between 26 March 2021 and 30 July 2021, among 712 hospitalised adults confirmed with SARS-CoV-2 in five tertiary-level hospitals in Tanzania. Retrospective data were analysed to determine baseline characteristics of the patients during acute COVID-19 admission. This was linked to prospective data that were collected 2 years postacute hospitalisation with COVID-19 to determine cardiopulmonary complications among these patients. Radiological pulmonary abnormalities were assessed by contrasted CT scan. Lung function tests were measured using a spirometer. Pulmonary hypertension and heart failure were confirmed by a transthoracic echocardiography. Generalised estimating equations were used to assess the associations between sociodemographic factors, clinical characteristics, treatment modalities and residual cardiopulmonary sequelae. **Results:** About half 317/712 (44.5%) were diagnosed with residual cardiopulmonary complications. Approximately 54% of participants were male. Median age (IQR) was 60 (48–69) years. Cardiopulmonary sequelae were significantly associated with body mass index (BMI) ≥25.0

kg/m2 compared with those with BMI <25.0 kg/m2 (adjusted OR (aOR) (95% CI)=3.4 (2.47 to 4.84), p<0.001), smokers compared with non-smokers (aOR (95% CI)=2.39 (1.09 to 5.23), p=0.030] and among participants who did not receive steroids during the acute COVID-19 (aOR (95% CI)= 1.62(1.16 to 1.92), p=0.042]. **Conclusion:** The independent predictors of residual cardiopulmonary manifestations due to COVID-19 were overweight, cigarette smoking, hypoxia and non-use of steroids during the acute phase of COVID-19 disease. Public health interventions addressing weight reduction and smoking cessation in conjunction with steroid use in acute COVID-19 may largely reduce the incidence of cardiopulmonary long COVID-19.

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530. Osima, D.J., Hussein, A.K., Anasel, M.G., *et. al*… (2025). HIV self-testing uptake and associated factors among adolescent girls and young women in certificate and diploma colleges, Dodoma, Tanzania: a cross-sectional study. *BMJ open*, Vol. 15(11). Doi:10.1136/ bmjopen-2024-097043.

Abstract

Objectives To determine the prevalence and factors associated with the uptake of HIV self-testing (HIVST) among adolescent girls and young women (AGYW) attending middle learning institutions in Dodoma City, Tanzania, in 2024. **Design:** A cross-sectional study design was employed. **Setting:** The study was conducted in five randomly selected colleges in Dodoma City, Tanzania. **Participants:** A total of 771 female students aged 15–24 years who provided informed consent were enrolled. Students who declined participation or were reported by the college matron as medically unfit were excluded. In this study, 'sick' referred to participants with a clinically diagnosed illness rendering them unable to participate. **Primary outcome:** The primary outcome was the uptake of HIVST among participants. **Results**: The mean age of participants was 20.78 years (SD=1.85). Overall, 360 participants (46.7% (95% CI 43.2% to 50.2%) reported having used HIVST. Among those who had not tested, the most commonly reported barriers included cultural resistance 392 (95.4%), fear of judgement from healthcare providers, 372 (90.5%); legal restrictions on kit provision, 360 (87.6%); fear of testing procedures, 291 (70.8%); concerns about test reliability, 286 (69.6%); fear of test results, 283 (68.9%); limited accessibility to HIVST kits, 280 (68.1%); fear of others discovering they had tested, 273 (66.4%); low awareness of HIVST, 193 (47.0%); and a perceived low risk of HIV infection, 73 (17.8%). Factors significantly associated with HIVST uptake included having multiple sexual partners adjusted prevalence ratio (aPR 1.23, 95% CI 1.05 to 1.45), studying health-related courses (aPR 1.14, 95% CI 1.04 to 1.27), availability of kits (aPR 2.83, 95% CI 2.21 to 3.62), previous HIV testing experience (aPR 2.65, 95% CI 2.05 to 3.43) and perceiving oneself at risk of HIV infection (aPR 1.29, 95% CI 1.11 to 1.50). **Conclusion:** The uptake of HIVST among AGYW in Dodoma City remains below the national target of 95% HIV awareness among people living with HIV. Uptake was influenced by factors such as multiple sexual partnerships, study discipline, kit availability, prior testing experience and perceived risk of infection. Addressing the identified barriers and improving awareness and accessibility of HIVST could enhance testing rates among AGYW

531. Pack, A.P., Jeon, H., Kaaya, S. *et al*… (2025). Adolescents' and young women's perspectives on participation in biomedical clinical trials for HIV prevention in Tanzania and India: a qualitative inquiry. *An International Interdisciplinary Journal for Research, Policy and Care,* Vol. 20(4). Doi:10.1080/17450128.2025.2457037.

Abstract

Adolescent girls and young women are disproportionately affected by HIV in many lower-resource settings. These individuals are often excluded from early clinical trials for new HIV prevention products, thus delaying potential access. We explored adolescent girls' and young women's (AGYW) perceptions of HIV risk, perspectives on trial participation, and understanding of research concepts. Individual or repeated in-depth interviews were conducted with a total of 43 AGYW. Interviews were conducted in participants' language of choice, audio-recorded, transcribed, and translated into English. Thematic analysis was applied. A total of 21 participants were enrolled from Dar es Salaam, Tanzania, and 22 from Pune, India. HIV risk perception varied by country, with Tanzanian participants often describing risk as behaviors tied to economic factors, and Indian participants describing risk as behaviors associated with limited HIV knowledge, inequitable gender norms, and pervasive sexual violence. Trial participation was largely viewed as acceptable; however, concerns were raised regarding standard recommendations for using condoms and contraception during trial participation, and the potential for side effects. Research concepts were notably challenging for participants to understand, particularly the concept of placebo. Although adult involvement was perceived as useful support in Tanzania, it was deemed essential for trial participation in India. Participants in our study described a need for and potential benefits of new HIV prevention products. Taking into consideration the local context, clinical trials with adolescent girls and young women should ensure understanding of research requirements and concepts, minimize preventive misconceptions, and consider involvement of a trusted adult.
Keywords: *HIV clinical trials, adolescent and young women, India, Tanzania.*

532. Pallangyo, A., Mashauri, O., Kalonge, S., *et. al*… (2025). *Burden* of HIV among Patients Undergoing Cancer Treatment: Analysis of Population Cancer Registry in Northern Tanzania. *Journal of Registry Management,* Vol. 52(2).

Abstract

Background: The burden of cancer in sub-Saharan African countries is escalating with a rising Human Immunodeficiency Virus (HIV) prevalence. However, information about the burden of HIV on cancer epidemiology is scarce. Specifically, little is known about HIV infection among the cancer cases registered in the Kilimanjaro Population Cancer Registry (KCR) despite the presence of this infection in Tanzania. Thus, our study aimed to assess the burden of HIV in cancer patients by evaluating HIV serostatus information among recorded cases of malignancies in the KCR. **Methods:** This secondary data analysis examined records of all cancer cases registered in the KCR from January 2018 through December 2022 to assess the status of HIV infection among the cancer cases. Variables assessed were demographic information, type of cancer, and HIV serostatus. Proportions were analyzed using descriptive data. **Results:** A total of 5,508 cancer cases were recorded from 2018 through 2022. HIV serostatus was documented in 4.8% (226/5,508) of the

cancer cases, 68% of which were HIV seropositive with a slight female predominance (male-to-female ratio of 1:1.7). Cervical cancer was the leading malignancy (18%) with recorded HIV serostatus. Patients aged 18–50 years and females had the highest prevalence of HIV infection (64.6% and 63.5%). **Conclusion:** HIV infection is still underreported among cancer patients in the cancer registry of the Kilimanjaro region with only 4.8% of malignancies registered in KCR having a documented HIV serostatus. HIV serostatus was mostly documented in AIDS-defining cancers. Thus, efforts to support HIV counseling and testing among cancer patients should be made, as this will also affect treatment plans and monitoring. ***Keywords:*** *Cancer registry, HIV, Tanzania.*

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533. Pancras, G., Morris, B., Mercury, S., *et. al*… (2025). COVID-19 vaccination advocacy among Tanzanian rural communities: lessons for future pandemics. *Rural and Remote Health*, Vol. 25(4). Doi:10.22605/RRH9868.

Abstract

Introduction: Vaccines, as a public good, require an inclusive approach to end vaccine-preventable diseases. Ensuring universal access to vaccination information is crucial, particularly in rural areas, where geographic and socioeconomic barriers persist. The COVID-19 pandemic highlighted these disparities, emphasizing the need for targeted advocacy strategies. This study examined information advocacy strategies used during the COVID-19 vaccination, and the implications. **Methods:** The study employed a case study design with a mixed-methods approach. The qualitative phase involved community health workers, local leaders, healthcare workers, and influential figures, while the quantitative phase focused on heads of households. All resided in the Geita region in north-western Tanzania. Purposive and multistage sampling techniques were used to select individuals during the qualitative and quantitative phases, respectively. Qualitative data were analyzed thematically, while quantitative data were analyzed descriptively. **Results:** Since we used a mixed-methods approach, the presentation of both qualitative and quantitative findings is on a theme-by-theme basis, or a weaving approach. The findings indicate that COVID-19 vaccination advocacy in rural settings hinges on three key elements (themes): strategic outreach points, preferred timing and the nature of the information communicated. **Conclusion:** Study findings suggest that future pandemic preparedness plans must consider strategic outreach points, optimal timing, and tailored messaging to strengthen vaccination advocacy in rural settings. Further studies are needed to examine the aforementioned advocacy strategies in different settings and populations. ***Keywords:*** *advocacy, COVID-19 vaccination, information, pandemics, Tanzania, vaccines.*

534. Patel, N.R., Jaffer, F., Kahinga, A., *et al*... (2025). The Locally Driven Temporal Bone Dissection Laboratory: A Sustainable Tool for Otologic Development in Sub-Saharan Africa. *OTO open*, Vol. *9*(2). Doi:10.1002/oto2.70134.

Abstract

Objective: To evaluate the feasibility of a temporal bone dissection laboratory in Tanzania to support otologic surgical training for otolaryngologists in the region. **Study Design:** This prospective cohort study evaluates six temporal bone laboratory training sessions over the course of 11 months. Pretraining and posttraining surveys were distributed during the first year of implementation in 2023. Postsurveys were distributed both immediately and 6 months posttraining. **Setting:** Single tertiary care academic medical center in Dar es Salaam, Tanzania. **Methods:** Participant data for 47 attendees including country/region of practice, otologic procedures completed, and number of trainees/audiologists in their clinical practice were collected in the pretraining survey. A 5-point Likert scale was used to assess pretraining and posttraining comfort with completing common otologic procedures. Study outcomes included comfort level, barriers to implementing acquired knowledge, and overall training quality. **Results:** The results highlight that participants did not have pretraining comfort with, exposure to, and training with many otologic surgeries. These limitations were largely attributed to barriers identified by participants including limited access to training, learning opportunities, and equipment for otologic procedures. Findings also indicate statistically significant increases in comfort level for the majority of common otologic procedures evaluated. **Conclusion:** This study highlights that the training has been both feasible for and desired by participants, and has addressed critical needs in continued surgical training. Temporal bone dissection labs are a feasible and highly desired model to increase the otologic capacity of practicing otolaryngologists regionally and offer a promising approach for addressing the lack of training opportunities in the region.

535. Pathiraja, V., Kurmi, O., Toh, T.H., *et al*… (2025). Exploring the availability and acceptability of hormone replacement therapy in LMICs using insights of pharmacists (MARIE Sri Lanka WP2a). *Scientific Reports*, Vol. 15(1). Doi:10.1038/s41598-025-18083-x.

Abstract

Hormone Replacement Therapy (HRT) remains underutilized and under-researched in low- and middle-income countries (LMICs), despite its potential to alleviate menopausal symptoms. This study explored pharmacists' perspectives on the use, cost, and availability of HRT across six

LMICs. A cross-sectional survey was conducted from January 1 to March 31, 2025, as part of the Global Menopause Project. Pharmacists working in community, hospital, and private sector settings in Malaysia, Sri Lanka, Nepal, Nigeria, Ghana, and Tanzania were recruited. Participants completed an anonymous online questionnaire. The questionnaire was piloted prior to dissemination, assessed HRT availability, pricing, and perceived barriers to use. A total of 331 pharmacists responded: Ghana (18·4%), Sri Lanka (17·5%), Tanzania (16·9%), Nepal (16·6%), Malaysia (15·4%), and Nigeria (15·1%). The respondents were almost equally distributed between sexes (50·8% were female), and most were aged 26–35 years (49·0%). The majority worked in private community pharmacies (41·7%) or government hospitals (32·6%), and 57·4% were based in urban areas. From the sample, 68·9% of pharmacists reported that HRTs were available for dispensing in their respective countries (highest proportion was reported in Nepal, 92·7% and lowest in Nigeria, 42%). HRT costs varied widely, with Sri Lanka reporting the highest prices and Malaysia the lowest. Key barriers identified included low health literacy, economic constraints, and limited healthcare access. Significant disparities exist in HRT access, availability and affordability across LMICs, with urban-rural gaps further compounding inequities. Pharmacists' insights underscore the urgent need for inclusive, equitable strategies in menopausal care and women's health policy in resource-limited settings.

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536. Patterson, R.H., Bangash, A.H., Zalaquett, N.,(2025). Global Barriers to Otolaryngology Care. *JAMA* Otolaryngology–*Head & Neck Surgery,* Vol. 151(6). Doi:10.1001/jamaoto.2025.0573.

Abstract

Importance Understanding: the global barriers to otolaryngology–head and neck surgery (OHNS) care is crucial in addressing disparities in access to care, particularly in low-income and middle-income countries (LMICs). **Objective:** To characterize barriers to comprehensive otolaryngology care across World Bank income groups. **Design, Setting, and Participants:** Using an online cross-sectional survey that was administered by the Global OHNS Initiative via international and national professional societies, personal contacts, and social media, this study captured the perceptions of otolaryngologists regarding barriers to OHNS care at the levels of the country, health sector, clinician, and patient. Participants included otolaryngologists from the 194 World Health Organization member states and Taiwan. Eligibility criteria included a medical degree and specialized training in managing conditions of the ear, nose, and throat. The nonresponse rate was not recorded. The data collection period spanned from October 2022 to June 2023.**Exposures:** Exposures included World Bank income group classification. **Main Outcomes and Measures:** The primary outcomes were Likert scale responses regarding frequency of barriers to OHNS care. The a priori hypothesis was that LMICs would report more frequent barriers to OHNS care. **Results**: The study involved 146 otolaryngologists (47 female individuals [32%]), with 69 (47%) from high-income countries and 77 (53%) from LMICs. Male individuals represented 45 high-income country respondents (65%) and 54 LMIC respondents (70%). Barriers

were reported across income groups at all levels of the health system, with a higher frequency in LMICs. Several barriers were reported to be more substantial in LMICs, such as the national volume and distribution of otolaryngologists, financial compensation for clinicians, and patient stigma, and others were common across income settings, such as the availability of operating rooms and inflexible working hours. Common concerns included national and health sector barriers: OHNS workforce, referral networks, government support; clinician barriers: excessive clinician workloads, understaffing, poor administration support; patient barriers: distance to health care facilities, financial burdens such as medical costs and foregone wages, stigma, and health literacy. **Conclusions and Relevance**: The results of this cross-sectional study suggest that there are barriers to otolaryngology care globally that affected all levels of the health care system. This work may inform prioritization of otolaryngology within research and policy, and it emphasizes the need for effective strategies to expand access to otolaryngology care, particularly in lower-income settings.

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537. Paulo, L.S., Lenters, V.C., Chillo, P., *etal* (2025). Dietary patterns in Tanzania's transitioning rural and urban areas. *Journal of Health, Population and Nutrition*, Vol. 44(71). Doi:10.1186/s41043-025-00774-w.

Abstract

Background: Like other Sub-Saharan Africa (SSA) countries, Tanzania is undergoing socio-economic changes that impact lifestyles and dietary choices. Traditionally, differences in dietary habits between rural and urban areas in Tanzania and other SSA countries were prominent. However, recent research indicates converging lifestyles and dietary choices associated with increased risk of cardiometabolic diseases. The objective of the current study was hence to investigate differences and similarities in dietary patterns, energy, and food groups intake in urban and rural Tanzania. **Methods:** Dietary habits were assessed by use of a Food Frequency Questionnaire (FFQ) for 442 respondents aged 44–65 years in urban (Ubungo -Dar es Salaam) and rural (Kilindi- Tanga) districts of Tanzania. Dietary patterns were determined using Principal Components Analysis (PCA). Bivariate analyses identified determinants of dietary patterns in urban and rural Tanzania. **Results:** Two dietary patterns, a "mixed pattern" characterized by whole grains, potatoes, fruits, vegetables, meat, fried potatoes and tubers, alcohol, sugar-sweetened beverages (SSB), sugar and sweets, and added oils and a "plant-rich pattern" characterized by whole grains, fruits, pulses and peas, seasoning vegetables and salads, SSB, sugar and sweets, and added oils were identified. Urban residents contributed more to the mixed pattern, while rural residents had a higher contribution to the plant-rich pattern. Overall, dietary diversity was greater in urban than rural Tanzania. The estimated median daily energy intake was 2,902 kcal (IQR: 1449.2) with a lower energy intake in rural (2,817 kcal, IQR: 1,274) as compared to urban residents (3,052 kcal, IQR: 1558) ($p = 0.021$). The percent contribution to the median average daily energy intake for grains, fruits, and milk was higher in rural than urban participants. No differences were observed for meat, poultry and eggs. **Conclusion:** We identified two distinct dietary patterns: a "mixed pattern" prominent in urban and a "plant-rich pattern" more common in rural. Urban diets were more diverse with slightly higher energy intake. These findings underscore the effects of urbanization on diets and the need for targeted nutritional intervention for both rural and urban

populations. ***Keywords:*** *Diet, Dietary pattern, Energy intake, Macronutrients, Urban, Rural, Sub-Saharan Africa, Tanzania*.

538. Pembe, A.B., Dwarkanath, P., Kikula, A., *et al*… (2025). Hypertensive disorders of pregnancy and perinatal outcomes: two prospective cohort studies of nulliparous women in India and Tanzania. *BMJ Global Health*, Vol. 10(7). Doi:10.1136/bmjgh-2024-016339.

Abstract

Introduction: Hypertensive disorders of pregnancy (HDP) have been linked with increased risk for maternal and offspring complications in high-income settings. However, in resource-limited settings, studies with robust measurement of HDP, including severity and timing, and perinatal outcomes are limited. **Methods:** We analysed data from two prospective cohorts of nulliparous women in India (n=10 570 pregnancies) and Tanzania (n=10 299 pregnancies) who were enrolled in calcium supplementation trials and had blood pressure and proteinuria assessments throughout pregnancy and at the time of labour and delivery. Generalized estimating equations were used to assess the relationship between HDP severity categories (gestational hypertension, preeclampsia without severe features and preeclampsia with severe features) and timing of HDP onset (early-onset <34 weeks vs late-onset ≥34 weeks gestation) with adverse perinatal outcomes. **Results:** The cumulative incidence of HDP was 3.7% and 4.5% in the India and Tanzania cohorts, respectively. All HDP severity categories were associated with a significantly higher risk for perinatal death in both cohorts (p values<0.05). Pregnancies complicated by pre-eclampsia with severe features had the largest magnitude of increased risk for perinatal death as compared with pregnancies without an HDP (India RR 8.60; 95% CI 5.90 to 12.53; Tanzania RR 4.05; 95% CI 2.91 to 5.66). In both cohorts, pre-eclampsia with and without severe features, but not gestational hypertension, was associated with increased risks for preterm birth and low birth weight. Pregnancies with early-onset HDP had a high absolute risk of perinatal death (India 25.6% and Tanzania 36.9%), and the risk was markedly increased as compared with late-onset HDP (India RR 4.79; 95% CI 2.68 to 8.54; Tanzania RR 5.79; 95% CI 3.56 to 9.41). **Conclusion:** were differentially associated with risks for perinatal outcomes by severity and timing of onset. Interventions that prevent, reduce the severity or delay the onset of HDP may improve perinatal outcomes in resource-limited settings.

539. Penzias, R.E., Ogero, M.O., Tillya, R., *et al*... (2025). Small and sick newborn care: Changes in service readiness scoring between baseline and 2023 for 65 neonatal units implementing NEST360 in Kenya, Malawi, Nigeria, and Tanzania. *PLOS global public health*, Vol. *5*(6). Doi: 10.1371/journal.pgph.0004367.

Abstract

Health Facility Assessments (HFAs) are important for measuring and tracking service readiness for small and sick newborn care (SSNC). NEST360 Alliance aims to reduce neonatal mortality in four countries (Kenya, Malawi, Nigeria, Tanzania). NEST360 and UNICEF facilitated HFA tool design with ministries of health in four African countries and developed two complementary approaches to summarise readiness. Using the NEST360/UNICEF HFA tool, we collected data, developed two service readiness scoring approaches for SSNC (standards-based scoring by

adapted World Health Organization (WHO) health system building blocks (HSBBs) and assessing service readiness across the health system, and level-2+ scoring by WHO clinical interventions), and applied across 65 neonatal units implementing NEST360. Service readiness change was assessed between baseline (Sept 2019-March 2021) and follow-up HFA (May-July 2023). For each neonatal unit, a percentage difference score was computed between baseline and 2023 HFA scores. Scores were calculated for each neonatal unit as the unit of analysis, and disaggregated by HSBB, clinical intervention, and sub-modules. Data from 65 neonatal units were analysed, i.e., 36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria. Median time between baseline and 2023 HFAs was 31 months [IQR 29–34 months]. Median baseline and 2023 scores were 41% [IQR 35–52%] and 55% [IQR 46–62%], respectively, with 14% median score change [IQR 4–18%] for level-2+ scores. For standards-based scores, median baseline and 2023 scores were 51% [IQR 48–58%] and 60% [IQR 54–66%], respectively, with a 9% median score change [IQR 3–11%]. Hospitals in Tanzania [Median 24%, IQR 16–30%] and Nigeria [Median 28%, IQR 17–30%] showed greater improvements on average for level-2+ scores compared to hospitals in Kenya and Tanzania. Data on changes in service readiness scores can be used to track service readiness over time, benchmark between hospitals, identify gaps, and assess progress towards newborn targets.

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540. Penzias, R.E., Ohuma, E.O., Odedere, O., *et al*… (2025). Neonatal unit human resources: coverage for six cadres and trends for staff-to-baby ratios in 65 neonatal units implementing with NEST360 in Kenya, Malawi, Nigeria, and Tanzania. *Human resources for health*, Vol. 23(1). Doi:10.1186/s12960-025-01031-1.

Abstract

Background: Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods:** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results:** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal units had a doctor providing care, or on-call coverage, at all times of day and night ($n = 20$, 31%), and half of hospitals lacked 24 h laboratory coverage ($n = 25$, 45%) with no change over time. There were improvements in neonatal data clerk ($n = 32$, 49% to $n = 58$, 89%) and biomedical technician ($n = 45$, 69% to $n = 56$, 86%) coverage

between baseline and 2023 HFAs. **Discussion:** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

541. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Additional file 3 of Neonatal unit human resources: coverage for six cadres and trends for staff-to-baby ratios in 65 neonatal units implementing with NEST360 in Kenya, Malawi, Nigeria, and Tanzania. *Human resources for health*, Vol. 23(1). Doi:10.1186/s12960-025-01031.

Abstract

Background: Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods:** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results:** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal units had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n = 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion:** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care. ***Keywords**: Newborn care, Neonatal, Human resources for health, Workforce, Nurses, Doctors, Neonatal nursing.*

542. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Additional file 2 of Neonatal unit human resources: coverage for six cadres and trends for staff-to-baby ratios in 65

neonatal units implementing with NEST360 in Kenya, Malawi, Nigeria, and Tanzania. figshare. *Human Resources for Health*. Doi: 10.6084/m9.figshare. 30607077.v1.

Abstract

Background: Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods:** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers**. Results:** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal units had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n = 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion:** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

543. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Additional file 1 of Neonatal unit human resources: coverage for six cadres and trends for staff-to-baby ratios in 65 neonatal units implementing with NEST360 in Kenya, Malawi, Nigeria, and Tanzania. *Human resources for health*, Vol. 23(1), 64. Doi: 10.6084/m9.figshare.30607074.

Abstract

Background Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline

HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n = 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

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544. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Additional file 1 Local ethical approval for the complex evaluation of the implementation of a small and sick newborn care package with Newborn Essential Solutions and Technologies (NEST360) in Kenya, Malawi, Nigeria, and Tanzania. *Human resources for health*, Vol. 23(1).

Abstract

Background: Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n

= 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

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545. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Additional file 2: Ward-specific nurse-to-baby ratios on day of and night before the visit with bed occupancy over time at 65 neonatal units in Kenya, Malawi, Nigeria, and Tanzania. Q; Quarter, HFA; Health Facility Assessment, Base; Baseline. *Human resources for health*, Vol. 23(1)

Abstract

Background Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n = 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

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546. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Additional file 4: Clinical and non-clinical staff coverage and skill-mix at 65 neonatal units in Kenya, Malawi, Nigeria, and Tanzania. *Human resources for health*, Vol. 23(1).

Abstract

Background: Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Methods:** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results:** For 65 neonatal units, the median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n = 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion:** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

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547. Penzias, R.E., Ohuma, E.O., Odedere, O., *et. al*… (2025). Neonatal unit human resources: coverage for six cadres and trends for staff-to-baby ratios in 65 neonatal units implementing with NEST360 in Kenya, Malawi, Nigeria, and Tanzania. *Human resources for health*, Vol. 23(1).

Abstract

Background: Implementing small and sick newborn care (SSNC) requires skilled health workers; however, there is a shortage, adversely impacting patient outcomes and health worker well-being. There are limited data and no current World Health Organization (WHO) standards for staff-to-baby ratios in neonatal units in low- and middle-income countries (LMICs) to inform policy, planning, and investment. **Method:** In 65 neonatal units (36 in Malawi, 13 in Kenya, 7 in Tanzania, and 9 in Nigeria), a health facility assessment (HFA) for SSNC and government-led quality improvement (QI) processes were implemented. Staffing data were collated from baseline HFA (Sept 2019–March 2021) and mid-2023 HFAs, and quarterly QI processes. The unit of analysis was the neonatal unit with day and night staff-to-baby ratios calculated. Ratios were aggregated overall, by country, by hospital level, and by neonatal unit occupancy rates. Staff coverage and skill-mix were also analysed for nurses, doctors, clinical officers, laboratory technicians, data clerks, biomedical technicians, and engineers. **Results:** For 65 neonatal units, the

median time between baseline and 2023 HFAs was 31 months (Interquartile Range (IQR) 29–34 months). In 2023, only 3 (5%) neonatal units had zero neonatal ward-specific nurses compared to 8 (12%) at baseline during the day. Between baseline and 2023 HFAs, median nurse-to-baby ratios were 1:6 (IQR 1:3–1:11) during the day and 1:10 (IQR 1:6–1:17) at night, with consistency over time. At baseline, only one third of neonatal had a doctor providing care, or on-call coverage, at all times of day and night (n = 20, 31%), and half of hospitals lacked 24 h laboratory coverage (n = 25, 45%) with no change over time. There were improvements in neonatal data clerk (n = 32, 49% to n = 58, 89%) and biomedical technician (n = 45, 69% to n = 56, 86%) coverage between baseline and 2023 HFAs. **Discussion:** Evaluation revealed variability by country and hospital level, and important shortfalls remain in the number of staff providing care. Neonatal survival in hospitals requires better staff-to-baby ratios and more skilled staff. To meet the projected shortfall in the health workforce, governments must invest in training more health workers for neonatal care.

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548. Perumal, N., Muhihi, A., Sudfeld, C, *et al*... (2025). The Dose-Response Effect of Calcium Supplementation on Biomarkers Associated with the Pathogenesis of Preeclampsia in Tanzania. *Current Developments in Nutrition*, Vol. *9*. Doi: 10.1016/j.cdnut.2025.106758.

Abstract

Objectives: Seventy countries included folic acid in their standards for the obligatory fortification of wheat flour, maize flour, or rice. The objective of this presentation is to share how existing data-collection systems (namely, birth defect surveillance systems) are used to inform the impact of food fortification. M**ethods:** We reviewed the Global Fortification Database (GFDx) website for studies that reported neural tube defects (NTDs) as an outcome in countries with mandatory fortification of wheat flour, maize flour, and/or rice. For studies to be included in the GFDx, they had to report pre- and post-fortification data using the same numerator (e.g., number of spinae bifida cases) and denominator (e.g., live births and still births). We assessed studies for the following information: was a birth defect surveillance system used to gather neural tube defect information (yes/no), and if yes, what were the NTD-prevalence results?. **Results:** As of January 2025, 11 of 70 countries with mandatory fortification of wheat flour, maize flour, and/or rice that include folic acid in their fortification standards have studies comparing NTDs before and after mandatory fortification was enacted. According to the World Bank, the countries are upper-middle- or high-income countries. In each of the countries, tyrosine kinase receptors [sFlt1], placental growth factor [PlGF], soluble endoglin [sEng]), inflammatory (C-reactive protein [CRP], soluble tumor necrosis factor receptor 2 [sTNFR2], IFN gamma, interleukin 6), endocrine (parathyroid hormone [PTH]), and metabolic (leptin, and renin) biomarkers using Luminex 8 plex multiplex assays, enzyme-linked immunosorbent assays (ELISA), or chemiluminescence. Linear regression estimated mean differences in biomarkers concentrations by calcium dose (1500 mg/day vs. 500 mg/day or no calcium) in the third trimester. **Results:** Compared to high-dose 1500 mg/day calcium sup plementation, women not receiving calcium supplements had higher concentrations of angiogenic (adjusted mean difference [adj. MD] 95% confidence intervals [CI]: sFlt-1, 0.29 ng/ml [0.14, 0.44]), inflammatory (adj. MD: TNFR2, 0.21 ng/ml [0.06, 0.36]), and endocrine biomarkers (adj. MD: 0.28 ng/ml [0.13, 0.42]) in the third trimester. There were no

differences in biomarker levels between low-dose 500 mg/day and high-dose 1500 mg/day groups. **Conclusions:** In the context of low calcium diets, concen trations of biomarkers associated with preeclampsia did not differ among women supplemented with 500 mg/day compared to 1500 mg/day of prenatal calcium, supporting the non-inferi ority of low dose calcium. Pregnant women in the observational cohort who did not receive calcium supplements had higher angiogenic, inflammatory, and endocrine biomarkers.

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549. Peter, J.A., Masoud, S., Kamori, D., *et al*… (2025). Co-occurrence and importance of AmpC and extended-spectrum beta-lactamases-producing gram-negative bacilli in clinical specimens at a Tertiary Hospital in Dar es Salaam, Tanzania. *Bulletin of the National Research Centre*, Vol. 49(1). Doi:10.1186/s42269-025-01323-5.

Abstract

Background: Third-generation cephalosporin-resistant and carbapenem-resistant Enterobacterales are threatening global public health. We investigated the presence of class C beta-lactamase (AmpC) and extended-spectrum beta-lactamase (ESBL) producers and the co-occurrence of AmpC and ESBL in gram-negative bacteria isolated from 134 clinical specimens at Muhimbili National Hospital in Dar es Salaam, Tanzania. **Methods:** We conducted a laboratory-based cross-sectional study involving routinely processed clinical isolates. The Analytical Profile Index-20 test (API20E) was used to identify isolates to species level. Antimicrobial susceptibility testing was performed using the Kirby–Bauer disk diffusion method. The double-disk synergy test was utilized to determine ESBL production. AmpC production was assessed using the disk approximation test, and the disk antagonistic test detected inducible AmpC production. Descriptive data analysis was carried out using SPSS. **Results:** Of the 134 isolates, 22.4% produced ESBL, 41.8% were resistant to carbapenems, and 44.8% exhibited constitutive production of AmpC. Additionally, 68.6% of the isolates were resistant to third-generation cephalosporins, and 9.7% co-produced ESBL and AmpC. Isolates from the adult intensive care unit showed a higher percentage of ESBL and AmpC producers. The highest rate of AmpC producers was found in pus samples (18/25, 72.0%). Sputum samples had significantly fewer AmpC producers (19, 11.1%, $p = 0.011$). The proportion of ESBL producers was more in pus samples (28.0%) and blood samples (27.0%). Antimicrobial resistance was significantly higher in AmpC and ESBL producers than the counterparts ($p < 0.001$). AmpC production was not accurately predicted by the ESBL results: It exhibited a sensitivity of 18.3%, a specificity of 72%, a positive predictive value of 43.3%, and a negative predictive value of 42.3%. Principal component analysis revealed potential similarities between Enterobacter spp. and Klebsiella spp. on ESBL and AmpC production. Constitutive AmpC and ESBL producers displayed a positive correlation, while inducible AmpC was orthogonal. **Conclusions:** The findings highlight a significant percentage of isolates producing ESBL and AmpC, with 9.7% exhibiting co-production of ESBL and AmpC and 68.6% resistant to third-generation cephalosporins. Routine testing for AmpC production is essential, as it was poorly predicted by ESBL test results. This complex situation necessitates an urgent need for rapid phenotypic tests to support appropriate prescribing decisions.

550. Pham, K., Miyaye, E., Ward, M., *et al*... (2025). Associations of Schistosoma mansoni Infection, Latent Tuberculosis, Host Interferon-γ Concentrations, and Praziquantel Treatment in Tanzanian Adults. *The* American *Journal of Tropical Medicine and Hygiene*, Vol. 114(2). Doi: 10.4269/ajtmh.25-0021.

Abstract

Latent tuberculosis infection (LTBI) and Schistosoma mansoni are common in Africa, and helminth-induced immunomodulation may affect LTBI detection. This study aimed to assess whether S. mansoni infection affects LTBI detection by the QuantiFERON-TB Gold Plus (QFT-Plus) assay and alters serum interferon-γ (IFN-γ) concentrations in response to Mycobacterium tuberculosis (Mtb) antigens at baseline and after 1 year, during which participants with S. mansoni infection received praziquantel treatment. At baseline, 65 individuals with schistosome infection had lower average IFN-γ concentrations in TB1-stimulated QFT-Plus supernatants compared with 83 uninfected individuals (10.4 versus 51.9 pg/mL, P = 0.038). Although not statistically significant, QFT-Plus test positivity rate was unexpectedly slightly higher among adults with schistosome infection at baseline (26.2% versus 18.1%, P = 0.24). The incidence over 12 months was higher posttreatment in participants initially infected with S. mansoni compared with those uninfected (13.9% [n = 5/36] versus 4.2% [n = 2/48], P = 0.13). By 12 months, IFN-γ concentrations were comparable between the two groups (53.8 versus 33.5 pg/mL, respectively, P = 0.56). Individuals who cleared S. mansoni infection experienced a nearly 12-fold increase in IFN-γ levels relative to those who remained uninfected, although this difference did not reach statistical significance (P = 0.17). In conclusion, baseline S. mansoni infection was associated with suppressed IFN-γ responses to Mtb antigens, suggesting helminth-induced immune dampening. Praziquantel treatment may partially restore TB-specific immune responses and facilitate LTBI detection. These findings highlight the potential role of S. mansoni as a critical cofactor affecting LTBI diagnosis in schistosomiasis-endemic regions.

551. Philipo, G.S., Bokhary, Z.M., Lakhoo, K. *et al*… (2025). A national roadmap for improving children's surgical care: an experience from Tanzania. *International Journal of Surgery*, Vol. 111(8). Doi: 10.1097/JS9.0000000000002629.

Abstract

Introduction: Purpose Nearly 1.75 billion children lack access to basic surgical care. The majority are in low- and middle-income countries (LMICs) where 50% of the population are children. We aimed to develop a policy-level, action-oriented, and implementable strategy to improve children's surgery in Tanzania. **Methods:** A bottom-up participatory approach was used for needs assessment and priority setting. This started 2 years after the launch of Tanzania National Surgical, Obstetrics, and Anesthesia Plans (NSOAPs). Steps taken were: (i) stakeholder identification and engagement, (ii) desk review of existing research, (iii) focused research on access to children's surgery, (iv) site visits and geographical mapping of the reach of selected hospitals, and (v) presentation to the Ministry of Health for validation. Findings were summarized in line with the NSOAP's building blocks. **Results:** A bottom-up approach was feasible in identifying children's surgical care challenges as a policy priority. We noted that regional hospitals are the main providers of children's

surgery, but the majority lacked the necessary resources and were beyond the recommended 2-hour reach. A super hub–hub–spoke model is a feasible model to pragmatically address patient, provider, facility, and national challenges at all levels of the healthcare system. **Conclusion:** Our findings propose a roadmap to practically achieve access to children's surgery, complementing existing NSOAPs. It highlights the feasibility of the approach in the developing context and relevant interventions that could guide the integration of surgery in existing national plans. Developing a functional surgical system in LMICs should be pragmatic to improve the overall quality of children's surgical care despite limited resources. Introduction The Lancet Commission on Global Surgery estimated that 5 billion people worldwide lack access to basic surgical care [1]. An estimated 90% are in sub-Saharan Africa (SSA), and nearly 1.8 billion are children [1,2]. In many SSA countries, children comprise over 50% of the total population [2,3]. Approximately 85% of children in low- and middle-income countries (LMICs) will have a surgically-treatable condition by the age of 15 years [4]. Pediatric surgical conditions often lead to lifelong disability or death, as they arise during critical developmental years [5]. However, less than 8% of children in these countries have access to even the basic surgical care services [2,6-9]. Access to surgical care for children remains poor and often overlooked in national health priorities [1,10]. Additionally, surgical service delivery is fragmented, with inadequate infrastructures, workforce, and financing [1,10-12]. As previously evidenced, a pediatric surgery workforce density of less than 0.37 per 100 000 is linked to decreased survival rates [13]. Some of the SSA countries have as low as 0.03 children per 100 000 children population under 15 years, resulting into poor outcomes of conditions amenable to surgical care [14-16].

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552. Puschner, B., Nakku, J., Hiltensperger, R., *et al...* (2025). Effectiveness of peer support for people with severe mental health conditions in high-, middle-and low-income countries: multicentre randomised controlled trial. *The British Journal of Psychiatry.* Doi:10.1192/bjp.2025.10299.

Abstract

Background: Some trials have evaluated peer support for people with mental ill health in high-income, mainly English-speaking countries, but the quality of the evidence is weak. **Aims**: To investigate the effectiveness of UPSIDES peer support in high-, middle- and low-income countries. **Method**: This pragmatic multicentre parallel-group wait-list randomised controlled trial (registration: ISRCTN26008944) with three measurement points (baseline and 4 and 8 months) took place at six study sites: two in Germany, and one each in Uganda, Tanzania, Israel and India. Participants were adults with long-standing severe mental health conditions. Outcomes were improvements in social inclusion (primary) and empowerment, hope, recovery, health and social functioning (secondary). Participants allocated to the intervention group were offered UPSIDES peer support. **Results**: Of the 615 participants (305 intervention group), 337 (54.8%) identified as women. The average age was 38.3 (s.d. = 11.2) years, and the mean illness duration was 14.9 (s.d. = 38.4) years. Those allocated to the intervention group received 6.9 (s.d. = 4.2) peer support sessions on average. Intention-to-treat analysis showed effects on two of the three subscales of the Social Inclusion Scale, Empowerment Scale and HOPE Scale. Per-protocol analysis with participants who had received three or more intervention sessions also showed an effect on the

Social Inclusion Scale total score (β = 0.18, P = 0.031, 95% CI: 0.02–0.34). **Conclusions**: Peer support has beneficial impacts on social inclusion, empowerment and hope among people with severe mental health conditions across diverse settings. As social isolation is a key driver of mental ill health, and empowerment and hope are both crucial for recovery, peer support can be recommended as an effective component of mental healthcare. Peer support has the potential to move global mental health closer towards a recovery- and rights-based orientation.

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553. Rabiel, I., Majigo, M., Urio, L., Nkinda, *et al*… (2025). Predominance of gram-negative multidrug-resistant pathogens causing lower respiratory tract infections among gene X-pert negative presumptive tuberculosis patients in Dar Es Salaam, Tanzania. *Annals of Medicine*, Vol. 57(1). Doi:1080/07853890.2025.2550577.

Abstract

Background: Lower respiratory tract infections (LRTIs) represent a significant global health burden. The clinical presentation of pulmonary tuberculosis (PTB) and other LRTIs often overlaps, making it difficult to differentiate based on clinical features only. This study aims to investigate the role of other bacterial pathogens in LRTIs among presumptive TB patients and to characterize antibiotic susceptibility patterns to inform appropriate patient management. **Materials and methods:** We conducted a cross-sectional study among patients with symptoms and signs suggestive of PTB at Muhimbili National Hospital and Infectious Diseases Centre in Dar es Salaam, Tanzania. Sputum samples collected for TB diagnosis using the original GeneXpert system were investigated for other causes of LRTIs. The sputum samples were assessed for quality based on the Bartlett criteria before culture. We performed descriptive statistics to summarize the data. **Results:** We assessed 470 sputum samples, of which 317(67.4%) were of good quality. Of 317 samples, 21 (6.6%) were Mycobacterium tuberculosis (MTB) positive by GeneXpert, while 126 (39.7%) had 138 significant bacterial isolates other than MTB. Pseudomonas aeruginosa 44/99 (44.4%) was the most prominent Gram-negative bacterium isolated, followed by Klebsiella pneumoniae 22/99 (22.2%). High rates of resistance were detected towards ampicillin (98%), penicillin (92%), and amoxicillin-clavulanic acid (65%). A high proportion of isolates, 71/138 (51.4%), were multidrug-resistant (MDR). **Conclusion:** This study revealed a high prevalence of LRTIs caused by non-TB pathogens, particularly MDR strains, among presumptive TB cases. MTB was detected only in high-quality sputum samples. The high resistance rate to commonly prescribed antibiotics for LRTIs necessitated further large-scale studies to inform and refine treatment guidelines and optimize patient care.

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554. Rajabu, H.M., Shalifu, F., Jacqueline, S., *et al*… (2025). Comorbidities, Intradialytic Complications and Prescription Pattern among Patients with Chronic Kidney Disease on Maintenance Dialysis at Tertiary Hospital in Tanzania: A Descriptive Cross-Sectional Study. *Tanzania Medical Journal*, Vol. 36 (2). Doi:10.4314/jfeemv12.

Abstract

Background: Chronic kidney disease (CKD) is a major public health challenge and a widely prevalent non-communicable disease in both the developed and developing world. Patients with

CKD on maintenance dialysis have been shown to present with different comorbidities and hemodialysis-associated complications that make them at risk of multiple drug prescriptions. We investigated comorbidities, hemodialysis-associated complications, and prescription patterns among patients with CKD on maintenance dialysis at a tertiary hospital in Tanzania. Methods: This was a retrospective cross-sectional study conducted among 180 patients who attended maintenance dialysis service at the Muhimbili National Hospital dialysis unit from 01 January to 30 June 2022. A structured questionnaire was used to collect both sociodemographic and clinical data from the dialysis unit database. Prescription pattern was assessed by arranging medications to their first level of an anatomical main group according to the Anatomical Therapeutic Chemical (ATC) classification system. **Results:** A total of 180 patients with CKD on maintenance dialysis were included in this study. The median age of study participants was 52 years (range 23-80 years), with male predominance (75.0%). The most common comorbidities were hypertension (35.2%), anaemia (21.6%), coronary artery disease (21.6%) and diabetes mellitus (12.7%). The major hemodialysis-associated complications observed include fatigue (34.5%), nausea and vomiting (17.9%), and headache (16.0%). Based on the Anatomical Therapeutic Chemical (ATC) classification system, drugs for the cardiovascular system were the most prescribed class of drugs (50.1%) followed by drugs for digestive and metabolic disorders (25.1%) and drugs for blood and blood forming organs (21.2%). **Conclusions:** The majority of patients with CKD on maintenance dialysis have comorbidities and present with intradialytic complications. The prevalent comorbidities and complications observed in the study were hypertension and anaemia, and fatigue, nausea, vomiting, and headache, respectively. These findings underscore the critical need for comprehensive management of such patients, with a focus on cardiovascular health, as cardiovascular drugs were the most frequently prescribed. ***Keywords:*** *Chronic Kidney Disease, Hemodialysis-associated complications, Prescription pattern, Dialysis, Tanzania.*

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555. Ramadhan, H.K., Peter, N.K., Maurice, M., *et al*… (2025). Factors Associated with Marginal Status Among Patients with Colorectal Cancer Undergoing Colorectal Resection with Curative Intent at Muhimbili National Hospital. Tanzania *Medical Journal*, Vol. 36(4). Doi:10.4314/zff6dw72.

Abstract

Background: Colorectal carcinoma is the third most diagnosed cancer globally and the second leading cause of death. It is the most common gastrointestinal malignancy. Its incidence increases with economic growth. Surgical resection, with or without adjuvant therapy, is the primary treatment. **Aim:** To determine factors influencing surgical outcomes among patients with colorectal cancer undergoing colorectal resection for curative intent at Muhimbili National Hospital (MNH). **Methodology:** A prospective cross-sectional study design was conducted from October 2022 to April 2023 and included all patients with colorectal cancer who had undergone colorectal surgery for curative intent at MNH. Demographic data, clinical presentation of the illness, treatment given before surgery, surgical procedure detail was collected using a structured questionnaire and checklist. Surgical outcomes such as resection margins status, surgical site infection, reoperation, and mortality were assessed within one-month post-operation. Data were analyzed using STATA, where measures of central tendency and frequency distributions were

found and associations of variables were done by bivariate and multivariate analysis. **Results:** A total of 139 patients were recruited. Of these, 75 were female (54.0%), and the mean age was 53.3±14.6. The overall rate of positive resection margins was 19.4%. Circumferential margins were positive in 13.7% of cases, distal margins in 7.2%, and proximal margins in 2.9%. Morbidity occurred in 30% of patients. This was defined as surgical site infections, peritonitis, intestinal obstruction, or acute kidney injury. The mortality rate was 10.8%. Patients who did not receive neoadjuvant therapy were 6.1 times more likely to have positive resection margins (OR 6.1). Positive microscopic nodal status was strongly associated with positive resection margins, with a 12.9-fold higher likelihood (OR 12.9) compared to negative nodal status. After adjusting for confounders, only microscopic nodal status and neoadjuvant therapy remained significantly associated with resection margin status. Patients with positive nodal status had an 11.6 times higher likelihood (OR 11.6) of positive resection margins. Those not receiving neoadjuvant therapy had a 5.6 times higher likelihood (OR 5.6). **Conclusion:** Positive nodal status and omission of neoadjuvant therapy are strong predictors of positive resection margins in colorectal cancer surgery at our center. Challenges in achieving clear circumferential margins highlight the need for more precise surgical techniques and advanced perioperative care. **Keywords:** Colorectal cancer, Resection margins, Neoadjuvant therapy, Nodal status, Surgical outcomes, Postoperative complications, Curative resection, Colorectal surgery

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556. Ramla, A. C., Emmanuel, E. M. (2025). The Use of Up-to-date Database by Healthcare Practitioners in Supporting Clinical Decision-Making at The Muhimbili University of Health and Allied Sciences, Tanzania. *Tanzania Medical Journal*, Vol. 36(1). Doi:10.4314/0wpabe04.

Abstract

Background: Healthcare practitioners encounter massive medical information online, which complicates clinical decision-making. UpToDate, launched in 1992 at Harvard Medical School, functions as a Clinical Decision Support System in high-income countries to enhance healthcare delivery. Despite the initiatives undertaken by Better Evidence to support access to the database, there was limited information available regarding the usage of the database by healthcare practitioners at Muhimbili University of Health and Allied Sciences. Broad **Objective:** The general objective was to evaluate the utilization of the UpToDate database by healthcare practitioners at the Muhimbili University of Health and Allied Sciences in support of clinical decision-making. Specifically, the study assessed the level of awareness, examined knowledge and skills, and identified the challenges associated with using the UpToDate database in clinical decision-making. **Methods:** The study employed a descriptive research design, utilizing both quantitative and qualitative approaches. Muhimbili University of Health and Allied Sciences was an area of study, with a sample size of 199, including postgraduate students, five academicians, and five librarians. Convenience and purposive sampling techniques were applied in selecting respondents. Data from the study were collected through questionnaires and interview methods. SPSS was used to analyze quantitative data, and qualitative data were analysed through thematic analysis. **Results:** The findings revealed moderate awareness of the UpToDate database. Due to inadequate training, the majority had insufficient knowledge and skills in using the database. As a

result, they used a simple search to retrieve information from the database. Additionally, postgraduate students faced challenges including insufficient guidance, inadequate knowledge, a cumbersome registration process, poor search skills, poor internet quality, resource allocation issues, and insufficient time for use. **Conclusions and recommendations:** The UpToDate Database is crucial for accessing clinical information; however, it was underutilized by postgraduate students. Therefore, librarians should find effective ways to communicate with healthcare practitioners to acquire the necessary skills and knowledge to provide accurate medical services. The institution should prioritize the UpToDate database to simplify access to medical expertise, thereby improving patient outcomes and institutional performance. ***Keywords:*** *UpToDate database, Healthcare practitioners, Clinical decisions, Clinical decision-making, UpToDate usage.*

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557. Raoul, D.Y., Zainab, H.Y., Fadhlun, M.A. (2025). Clinical Profile and Treatment Outcomes of Women and their Neonates Admitted in The Obstetric Intensive Care Unit, Muhimbili National Hospital, Tanzania. *Tanzania Medical Journal,* Vol. 36(1). Doi:10.4314/2ctw8k11.

Abstract

Background: Critical illness during pregnancy and puerperium may result from -associated complications, non-obstetric medical illness, or preexisting conditions. The best outcome for both maternal and neonates depends on the multidisciplinary approach, from the involvement of obstetricians, neonatologists, physicians or surgeons and critical care physicians. Muhimbili national hospital's obstetric critical care unit is still in the early stage, therefore there is a need to study the clinical profiles and treatment outcomes of critically ill obstetric patients for further improvement of maternal health care. **Methods:** A cross-sectional facility-based study was conducted using 257 case files of women who were admitted to the obstetric intensive care unit during pregnancy or puerperium from November 2017 to December 2018 at Muhimbili National Hospital. The socio-demographic characteristics, indications for admission, interventions given, and maternal and fetal outcomes were retrieved from the case files and charts using a checklist. Statistical software version 23 was used and the descriptive statistics were presented in frequency and summarized in tables. **Results:** Over a fourteen-month study period, 10,112 women were delivered at Muhimbili National Hospital, and 0.25% were admitted to the Obstetric intensive care unit with a mean age of 28±6.6 SD. Most patients were multiparous and admitted during the postpartum period. Obstetric hemorrhage (33.1%) and pregnancy-related hypertension with its complications (45.5%) were the leading causes of admissions. The most common interventions done were blood transfusion (53.3%), anticonvulsants (31.1%) and mechanical ventilation (28.8%). Overall, the fatality rate among women admitted to Intensive care unit was 20%. **Conclusion:** Critically ill obstetric patients were relatively young in our study population, mostly admitted due to obstetric hemorrhage and pregnancy-related hypertension. Morbidity and Mortality associated with these conditions are preventable by emphasizing on early detection and involvement of a multidisciplinary team with increased access to a dedicated intensive care unit and high dependency unit. ***Keywords:*** *Critical care, Obstetrics, Maternal mortality.*

558. Rashid, G., Emmanuel, C., Emanueli, M. (2025). Knowledge of Risk Factors and Warning Signs of Stroke among Hypertensive Patients at Jakaya Kikwete Cardiac Institute, Tanzania: A Cross-Sectional Study. *Tanzania Medical Journal,* Vol. 36(2). Doi:/10.4314/9ysyv785.

Abstract

Background: In Tanzania, approximately two-thirds of patients who die from stroke have a history of hypertension. Awareness of stroke risk factors and the ability to recognize its warning signs are critical, particularly among high-risk populations such as individuals with hypertension. However, there is limited evidence in Tanzania regarding the level of knowledge among hypertensive patients about these risk factors and early warning signs of stroke. **Broad objective:** Assessment of knowledge of risk factors and warning signs of stroke among hypertensive patients at the Jakaya Kikwete Cardiac Institute in Tanzania. **Methods:** A descriptive cross-sectional survey was conducted between February and March 2022 among patients with hypertension attending clinic at the Jakaya Kikwete Cardiac Institute. A systematic sampling technique was used to recruit 280 study participants. Quantitative data were collected using an interviewer-administered questionnaire. Descriptive statistics and logistic regression analyses were performed using SPSS version 25. **Results:** A total of 280 participants were included in this study. Among the study participants, only less than half of them had adequate knowledge of the risk factors (46.5%) and only half (40.6%) of them had adequate knowledge of warning signs of stroke. Urban residence (AOR 4.63; 95%CI 1.65-12.98) and tertiary education level (AOR 12.73; 95%CI 5.31-30.59) were associated with higher odds of having adequate knowledge of stroke risk factors. Tertiary education level (AOR 10.98; 95%CI 4.96-26.22) and previously seeing someone with a stroke (AOR 11.31; 95%CI 4.99-25.61) were associated with higher odds of having adequate knowledge of stroke warning signs. **Conclusion and recommendations:** This study revealed that the majority of participants had inadequate knowledge of stroke risk factors and warning signs. Significant predictors of knowledge included education level, place of residence, and prior exposure to stroke. Therefore, targeted educational programs aimed at increasing stroke awareness among individuals with hypertension should be implemented, with particular emphasis on rural areas. Healthcare providers should ensure that hypertensive patients receive adequate and personalized information regarding their stroke risk and early warning signs. ***Keywords:*** *Hypertension, Knowledge, Risk factors, Stroke, Warning signs.*

559. Rebai, A., Abayomi, A., Andanda, P., *et al*… (2025). Responsible governance of genomics data and biospecimens in the context of broad consent: experiences of a pioneering access committee in Africa. *BMJ Global Health*, Vol. 10(2). Doi:10.1136/bmjgh-2024-016026.

Abstract

International collaboration in genomic research is gaining momentum in African countries and is often supported by external funding. Over the last decade, there has been an increased interest in African genomic data. The contribution of this rich data resource in understanding diseases predominant in both African and global populations has been limited to date. There has been some

non-governmental funding dedicated to the advancement of genomic research and innovation by African-based and African-led research groups, but the impact of these initiatives is hard to quantify. However, there is now an opportunity for the global research community to leverage decades of genomic data and biospecimens originating from African populations. The experience we describe in this paper is of an access governance framework established under the Human, Heredity, and Health in Africa (H3A) consortium, given the task of managing wider access to the data and biospecimen resources collected via its various projects. The function of the Data and Biospecimen Access Committee (DBAC) is to facilitate the advancement of medicine and health while fostering the development of bioinformatics capabilities at Africa-based institutions or regional hubs. Our collective experiences and lessons learnt as a committee provide examples of nuanced considerations when evaluating access to African data. The committee was semi-autonomous in its establishment and had independence in decision-making. The DBAC continually advocates for the responsible use of genomic data and biospecimens that were obtained from African research participants, under broad consent, by primary researchers who no longer have oversight over the future use of these resources.

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560. Rees, C. A., Fan, L. K., Kariuki, J., *et. al*… (2025). Geographic and Gender Representation in Authors of Editorials on Publications from Low-and Middle-Income Countries. The American journal of tropical medicine and hygiene, Vol. 114(1). Doi:10.4269/ajtmh.25-0534.

Abstarct

The selection of authors for editorials reflects perceptions of expertise and influence. Our objectives were to determine author geographic and gender distribution, determine temporal trends in editorial authorship, and identify factors associated with the inclusion of authors affiliated with low- and middle-income countries (LMICs) in editorials on research conducted in LMICs. We conducted a cross-sectional study of editorials on research in LMICs published in 15 global health, pediatrics, and general medicine journals from 2014 to 2024. To assess temporal changes in authorship, we plotted the proportion of editorial authors affiliated with LMICs and those with female names by year. We used multivariable logistic regression to identify factors associated with the inclusion of one or more LMIC-affiliated authors. There were 107,629 publications and 1,350 editorials on research in LMICs with 2,401 authors. Authors of editorials were most often affiliated with institutions in North America (38.1%) and high-income countries (71.6%). The proportion of authors of editorials affiliated with institutions in high-income countries decreased from 84.9% in 2014 to 65.3% in 2024. Authors of editorials more commonly had male names than female (60.1% versus 38.7%, P <0.001). The proportion of editorial authors with female names increased from 32.1% in 2014 to 48.2% in 2024. Editorials accompanying publications reporting studies with larger sample sizes (aOR = 1.52, 95% CI: 1.03–2.26) and research conducted in sub-Saharan Africa (aOR = 2.84, 95% CI: 1.74–4.68) were more likely to include LMIC-affiliated authors. Additional efforts are needed to include authors affiliated with LMICs in editorials on research conducted in LMICs.

561. Rees, C. A., Kisenge, R., Godfrey, E., *et al*... (2025). Machine learning approaches to identify neonates and young children at risk for postdischarge mortality in Dar es Salaam, Tanzania and Monrovia, Liberia. *BMJ Paediatrics Open*, Vol. 9(1). Doi:10.1136/bmjpo-2025-003547.

Abstract

Background: The time after hospital discharge carries high rates of mortality in neonates and young children in sub-Saharan Africa. Previous work using logistic regression to develop risk assessment tools to identify those at risk for postdischarge mortality has yielded fair discriminatory value. Our **objective:** was to determine if machine learning models would have greater discriminatory value to identify neonates and young children at risk for postdischarge mortality. **Methods:** We conducted a planned secondary analysis of a prospective observational cohort at Muhimbili National Hospital in Dar es Salaam, Tanzania and John F. Kennedy Medical Center in Monrovia, Liberia. We enrolled neonates and young children near the time of discharge. The outcome was 60-day postdischarge mortality. We collected socioeconomic, demographic, clinical, and anthropometric data during hospital admission and used machine learning (ie, eXtreme Gradient Boosting (XGBoost), Hist-Gradient Boost, Support Vector Machine, Neural Network, and Random Forest) to develop risk assessment tools to identify: (1) neonates and (2) young children at risk for postdischarge mortality. **Results:** A total of 2310 neonates and 1933 young children enrolled. Of these, 71 (3.1%) neonates and 67 (3.5%) young children died after hospital discharge. XGBoost, Hist Gradient Boost, and Neural Network models yielded the greatest discriminatory value (area under the receiver operating characteristic curves range: 0.94–0.99) and fewest features, which included six features for neonates and five for young children. Discharge against medical advice, low birth weight, and supplemental oxygen requirement during hospitalisation were predictive of postdischarge mortality in neonates. For young children, discharge against medical advice, pallor, and chronic medical problems were predictive of postdischarge mortality. **Conclusions:** Our parsimonious machine learning-based models had excellent discriminatory value to predict postdischarge mortality among neonates and young children. External validation of these tools is warranted to assist in the design of interventions to reduce postdischarge mortality in these vulnerable populations.

562. Rehema, T., Fransisca, K., Emmanuel, N., *et al*… (2025). Bacterial isolates, antibiotic susceptibility, and determinants of positive blood culture in children with community-acquired pneumonia in Central Tanzania. Academia, Vol. 52(145). Doi: 10.11604/pamj.2025.52.145.46769.

Abstract

Introduction: Despite the widespread coverage of Hemophilus influenzae type b (Hib) and pneumococcal conjugate vaccines, the mortality of children under five years due to community-acquired pneumonia (CAP) in Tanzania remains unacceptably high. This study aimed to identify bacterial isolates, antibiotic susceptibility, and factors associated with blood culture positivity in children under five with CAP. **Methods:** A cross-sectional study involving 195 children under-five years of age who were clinically diagnosed with CAP was conducted at a referral hospital in central

Tanzania from October 2018 to March 2019. Blood samples were taken, identification of culture isolates was performed through conventional bacteriological methods, followed by antibiotic susceptibility testing. Demographic and other data were collected using a standardized tool. **Results:** Bacteremia was prevalent in 7.2% of participants, with Staphylococcus aureus being the most common isolate (57.1%). Overall, isolates were less sensitive to the WHO first-line antibiotics recommended for CAP treatment (penicillin and cephalosporins) but were sensitive to ciprofloxacin and clindamycin. Fever (>38.5°C), oxygen saturation (<90%), the need for oxygen therapy, a high respiratory rate (>60 cycles/minute), and leucocytosis (>15,000 cells/μl) were independent factors associated with positive blood culture. **Conclusion:** Bacteraemia in children with CAP was nearly 10%, predicted by high respiratory rates, hypoxia, fever, and leucocytosis. Most of the isolates were insensitive to antimicrobials listed in the WHO-recommended first-line treatment for CAP, outlining the importance of routine culture and antimicrobial susceptibility.

Keywords: *Historical Legacies, Governance Challenges, East Africa, Survey Research, Post-Colonial State, Political Accountability, Institutional Memor.*

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563. Robins, D., Goodman, R.N., Pulmones, R., *et al*… (2025). Genome sequence of antibiotic-resistant Klebsiella quasipneumoniae FSFC0558: a novel sequence type (ST8212). *Access Microbiology*, Vol. *7*(4). Doi:10.1099/acmi.0. 000944.v3.

Abstract

Klebsiella quasipneumoniae are Gram-negative bacteria of the family *Enterobacteriaceae*, distinguished from other members of the *Klebsiella* genus through a chromosomally encoded extended spectrum β-lactamase, bla_{OKP}. Here, we report a hybrid-assembled genome of a novel sequence type of K. quasipneumoniae, subspecies similipneumoniae , isolated from a faecal sample of a patient with sepsis. ***Keywords:*** *antibiotic resistance genome sequence Klebsiella quasipneumoniae sepsis.*

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564. Rosser, B.S., Mkoka, D.A., Trent, M. (2025). Effects of an Afrocentric Sexual Health Education Curriculum for Medical, Nursing, and Midwifery Students in Tanzania: A Single-Blinded Randomized Controlled Phase 3 Trial. *Archives of sexual behavior*, Vol. 54(7). Doi:10.1007/s10508-025-03207-1.

Abstract

Sub-Saharan Africa has the world's highest rates of sexual health challenges. Yet, sexual health curricula for health students are rare. To advance research on the effects of such a curricula, we conducted the first randomized controlled trial of a sexual health curriculum for health students. "Training for Health Professionals" was a randomized, controlled, single-blind, trial conducted in Tanzania. In 2021, 412 nursing, midwifery, and medical students were stratified by discipline, completed baseline assessments, then randomized to receive a four-day comprehensive curriculum (n = 206) or to a waitlist control (n = 206). The curriculum covered sexual health across the lifespan, male and female sexual dysfunctions, key populations (LGBT, sex workers), sexual violence, clinical skills building, ethics, policy writing, and cultural considerations. Primary

outcomes were assessments of sexual health knowledge, attitudes, and clinical skills at baseline, post-intervention, and three-month follow-up. Clinical skills were evaluated through videotaped standardized patient interviews assessed by expert rater's blind to arm of study or baseline/follow-up interview. Attrition was minimal (< 1%); final sample size was 408. Compared to control, intervention participants had statistically significant, moderate to large, increases in sexual health knowledge (), confidence in addressing patients' concerns (), ability to discuss sexual health with patients and improved clinical skills (for interpersonal communication; for medical history taking). Most participants (76.6%) evaluated the curriculum as culturally appropriate for Africa. No adverse effects were observed. This study provides "gold standard" evidence that training in sexual health is culturally acceptable, needed, and effective for nursing, midwifery, and medical students. Such training may be particularly important in sub-Saharan Africa and low- and middle-income countries given substantial sexual health challenges.

565. Rugarabamu, S., Mwanyika, G. (2025). Biotechnological innovations to combat antimicrobial resistance and advance global health equity. *Bacteria,* Vol. 4(3). Doi:10.3390/bacteria4030046.

Abstract

Antimicrobial resistance (AMR) is a growing global health emergency that threatens the effectiveness of modern medicine, exacerbating healthcare costs, morbidity, and mortality, particularly in low- and middle-income countries (LMICs). Traditional approaches to antimicrobial development and stewardship have proven inadequate in curbing the rapid emergence and spread of resistant pathogens. This review explores cutting-edge biotechnological innovations as sustainable, precision-based solutions to combat AMR and promote global health equity. A comprehensive narrative review was conducted using literature published between 2018 and 2023 from PubMed, ScienceDirect, and Web of Science. Peer-reviewed studies focusing on novel antimicrobial strategies were thematically analyzed, with attention to efficacy, feasibility, and translational readiness. Key innovations identified include nanotechnology-enhanced antimicrobial delivery, bacteriophage therapy, CRISPR-Cas gene editing, immunotherapy, and personalized medicine. These strategies demonstrated substantial in vitro and in vivo efficacy, such as >90% MRSA biofilm reduction via silver nanoparticles and 95% carbapenem susceptibility restoration in *E. coli* using CRISPR-Cas9. When integrated with machine learning and rapid diagnostics, these approaches enable precision-targeted therapies and data-informed stewardship, offering scalable solutions adaptable to diverse healthcare systems. Antimicrobial resistance demands urgent, equitable innovation. Integrating biotechnologies like CRISPR, phage therapy, and nanomedicine with data-driven tools offers promising solutions. To ensure real-world impact, we recommend establishing regionally tailored translational research platforms and public–private partnerships as the most effective strategy to scale innovations and strengthen AMR response in low-resource settings. ***Keywords:*** *antimicrobial resistance; CRISPR; bacteriophage therapy; nanotechnology; immunotherapy; personalized medicine; LMICs; precision diagnostics.*

566. Rugarabamu, S., Ngingo, B.L., Kemibala, E.E., *et. al*… (2025). Comparative Epidemiological Analysis of the 2023 and 2025 Marburg Virus Disease Outbreaks in

Kagera Region, Tanzania. *IJID One Health*, Vol. 100094. Doi: 10.1016/j.ijidoh.2025.100094.

Abstract

Objectives: Marburg virus disease (MVD) is a severe zoonotic hemorrhagic fever with high case fatality rates (CFR). Tanzania's Kagera Region experienced MVD outbreaks in 2023 and 2025, offering critical insights into evolving epidemiological trends and the effectiveness of response strategies. This study compares these outbreaks to inform future preparedness. **Methods:** We conducted a retrospective analysis of official situation reports from the Tanzanian Ministry of Health, the World Health Organization (WHO), and other health authorities. Data on sociodemographic, CFR, transmission dynamics, response metrics (alerts, samples, contacts), and response timelines were analyzed using descriptive statistics, chi-square, and t tests. The time-varying reproduction number (Re) was estimated using the EpiEstim R package. **Results:** The 2025 outbreak had a significantly higher CFR (100 %) compared to 2023 (66.7 %) ($P < 0.05$). Demographic shifts included a decrease in median age from 35 to 30 years and a reversal in sex distribution, with women more affected in 2025 (70 %) vs men in 2023 (66.7 %) ($P = 0.03$). The outbreak epicenter shifted from Bukoba to Biharamulo district. While the scale of response increased dramatically in 2025 (alerts: 131 to 1218; samples tested: 78 to 202), the initial response was delayed, with a longer interval from symptom onset to outbreak declaration (37 days in 2025 vs 10 days in 2023) and initial diagnostic confusion. Mean Re was <1 throughout the 2023 outbreak but exceeded 1 mid-epidemic in 2025. **Conclusions:** The 2025 outbreak was characterized by increased lethality and distinct demographic shifts. The response demonstrated a significant scale-up in surveillance and international coordination. However, critical challenges in early detection, diagnostic confirmation, and the efficiency of converting alerts into traced contacts highlight the need for a balanced strategy that couples technological innovation with fundamental strengthening of health system core functions.

567. Rugemalila, J., Minja, A., Somba, M., *et al*... (2025). "All I want is to be involved in my treatment": Experiences of HIV treatment and viral load monitoring among adolescents, young adults and healthcare providers in Tanzania. *PLoS One*, Vol. *20*(6). Doi: 10.1371/journal.pone.0320272.

Abstract

Background: Virologic response is the earliest indicator of HIV treatment, making it the gold standard in monitoring treatment response. This study explored experiences and challenges of HIV treatment and viral load (VL) monitoring among adolescents and young adults (AYAs), parents or guardians of young adolescents, and healthcare providers (HCPs). **Methods:** This was a qualitative study conducted between March and May 2022 in five health facilities in an urban setting of Tanzania. We performed 20 in-depth interviews (IDIs) with AYAs who had full HIV-positive status disclosure, 8 IDIs with parents or guardians of young HIV-infected adolescents, and five focus group discussions (FGDs) with 30 HCPs. The IDIs and FGD transcripts were translated from Swahili into English, transcribed, coded, and performed thematic analysis using NVivo software. **Results:** AYA demonstrated an understanding of HIV treatment as lifelong, and most

knew the benefits of HIV viral load (HVL) monitoring. It was apparent that 60% of older adolescents (15–19 years), parents or guardians, and young adults (20–24 years) discussed HVL results with HCPs, and the majority desire to be involved in their HIV treatment. HCPs reported that missing clinic appointments among AYAs attending boarding schools or college contributes to delays in HVL testing and initiation of **enhanced adherence counselling** (EAC). Notably, HCP faced challenges recalling AYAs who received three to six multi-month **anti-retroviral drug (ARV)** refills when their HVL results were high (VL ≥ 1000 copies/ml). **Conclusions:** More than half of AYAs expressed ownership in their HIV treatment; they discussed the meaning of their HVL results with HCPs. Additionally, AYAs reported non-frequent challenges in HVL testing; however, HCPs described missing appointments for AYAs on three to six multi-month dispensing of ARVs as major challenges for implementing HVL testing. Importantly, multi-month ARV dispensing in AYAs needs program evaluation to inform the best implementation modality to support viral suppression.

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568. Rugemalila, J., Ndege, R., Kunambi, P., *et al*… (2025). Viral suppression after failure of PI-based ART among adolescents and youths with and without drug resistance mutations: a longitudinal analysis in Tanzania. Journal *of Antimicrobial Chemotherapy*, Vol. 80(6). Doi:10.1093/jac/dkaf125.

Abstract

Background: People living with HIV (PLHIV) who fail first-line ART have a higher risk of failing subsequent ART. We examined viral suppression (VS) among adolescents and youths (AY) failing PI ART in Tanzania. **Methods:** We conducted a retrospective study nested within a national third-line cohort of PLHIV. We analysed data of 147 AY (aged 10–24 years) with failure of PI-based ART between 2020 and 2022 who were followed for 12 months to assess for VS. Descriptive statistics were summarized by demographics and clinical characteristics, and we used logistic regression to assess factors associated with virological failure (VF) and drug resistance mutations (DRMs). **Results**: More than 40% of 147 participants had HIV subtype A, 52% (76/147) harboured major PI DRMs and 35% had NRTI mutations. A PI regimen at ART initiation was associated with a major PI DRM adjusted relative risk (aRR) of 1.66 (95% CI: 1.13–2.44; $P=$ 0.010). Among participants with major PI DRMs, 12.2% had intermediate to high levels of resistance to lopinavir and atazanavir, and 2.1% to darunavir, respectively. V82A was the most frequent PI DRM; NRTI mutations included thymidine analogue mutations and absent K65R. VS occurred in 65% of AY who had PI DRMs compared with 45% of those without DRMs; this difference was not statistically significant. **Conclusion:** More than half of AY who had PI DRMs had a higher proportion of early VS (65%) compared with those without DRMs (45%). Optimal viral load monitoring, adherence intensification and routine drug resistance testing are key strategies to improve VS.

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569. Rugengamanzi, E., Dharsee, N., Lugina, E.L., *et al*… (2025). Comparison of clinicopathological features and survival in triple-negative and non-triple-negative breast cancer patients in Tanzania. *The oncologist*, Vol. 30(11). Doi:10.1093/oncolo/oyaf345.

Abstract

Purpose: Breast cancer is a heterogeneous disease with a wide spectrum of subtypes, each with distinct biological features. Data on tumor subtypes in East Africa are sparse despite the rising incidence of breast cancer in this region. We aimed to determine the prevalence of triple-negative breast cancer (TNBC) and to compare clinicopathological features, overall survival (OS), and factors affecting OS of patients with TNBC and non-TNBC in Tanzania. **Methods:** This retrospective nested case–control study included patients with histologically proven breast cancer treated at Ocean Road Cancer Institute (ORCI) in Tanzania from January 2018 to December 2019. Logistic regression was used to determine factors associated with TNBC, and Cox proportional hazards regression was used to determine the factors independently associated with overall survival. **Results:** TNBC constituted 23.3% of all breast cancer diagnoses. Patients in the TNBC group were younger (median age 46 vs 53 years, P < .001) and more often presented with stage IV disease (12% vs 4%, P = .001). Three-year OS was significantly lower in the TNBC group (36%) compared to the non-TNBC group (57%) (P = .004) and remained lower for the TNBC group across every tumor stage. Brain metastasis was higher in the TNBC group (34% vs 7%, P < .001). Factors associated with improved survival included shorter symptom duration (0.53 [0.36-0.78]), earlier stage (0.23 [0.12-0.46]), use of neoadjuvant chemotherapy (0.59 [0.40-0.86]), and surgery with clean margins (0.34 [0.19-0.60]). **Conclusions:** TNBC accounted for nearly a quarter of the breast cancers at ORCI. TNBC was associated with younger age, more aggressive clinicopathologic features, and worse survival. Efforts toward earlier diagnosis and optimized therapies will be critical to improving TNBC outcomes in Tanzania.

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570. Ruggajo, P., Ismail, A., Rugemalila, J.J., *et al*… (*2025*). Moderate to Severe Renal Insufficiency Among Individuals with Human Immunodeficiency Virus Infection in Tanzania. *Tanzania Medical Journal*, 36(1). Doi:10.4314/b6q3a531.

Abstract

Background: Information about renal insufficiency and associated risk factors among people living with HIV (PLHIV) infection in East Africa is limited. The aim of this study was to determine the prevalence and factors associated with moderate to severe renal insufficiency among PLHIV in Dar es Salaam, Tanzania. **Methods:** A cross-sectional analysis of the baseline clinical data for 30,822 PLHIV who enrolled at the Management and Development for Health - Care and Treatment Clinics (MDH-CTCs) in Dar es Salam, Tanzania was done. Moderate to severe renal insufficiency was defined as estimated glomerular filtration rate (eGFR) < 60mL/min/1.73m2 based on the CKD-EPI equation. Poisson regression models weighted by the inverse probability of inclusion in the study were used to estimate prevalence ratios for predictors of renal insufficiency. **Results:** Our study population was relatively young [median age (IQR) of 35 (17-50) years], predominantly female (57% non-pregnant, 13.1% pregnant of all participants), and the majority (90.6%) were ART (Anti-Retroviral Therapy) naïve. The overall prevalence of moderate to severe renal

insufficiency was 8.2%. In multivariable adjusted analysis, moderate to severe renal insufficiency was significantly associated with older age (i.e. ≥ 50 years) [Prevalence Ratio (PR) 2.16, 95% CI (1.70-2.75)], mid-upper-arm circumference under 22 cm [PR 1.48 (1.06, 2.07)], CD4+ cell counts of < 50 cells/mm3 [PR 1.43(1.10-1.85)]; and WHO HIV/AIDS stage IV [PR 16 2.09(1.40-3.11)]. **Conclusion:** Moderate to severe renal insufficiency is prevalent among PLHIV enrolled at Care and Treatment Centers in Dar es Salaam, Tanzania. In particular, older patients with advanced HIV/AIDS stage and poor liver function are more likely to present with moderate to severe renal insufficiency. However, further studies to explore the causal relationship between these associated risk factors and the outcomes (renal insufficiency) are warranted. ***Keywords:*** *Kidney disease, Risk factors, AIDS, HIV adult patients, Tanzania.*

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571. Ruggajo, P., Mohamed, S., Msilanga, D., *et al*... (2025). Prevalence and factors associated with restless legs syndrome in hemodialysis patients at Muhimbili National Hospital, Tanzania. Doi:10.21804/28-1-7078.

Abstract

Background: Restless legs syndrome (RLS) is a common motor-sensory disorder among chronic kidney disease patients on hemodialysis, significantly affecting quality of life. While its prevalence varies widely, there is a lack of research on RLS in African hemodialysis patients. This study aims to address this gap by assessing the prevalence, severity, and associated factors of RLS in patients undergoing HD at Muhimbili National Hospital (MNH) in Tanzania. **Methods:** A six-month cross-sectional study (August 2023 - January 2024) was conducted at the Muhimbili National Hospital hemodialysis unit, enrolling 348 end-stage kidney disease patients aged ≥18 years. RLS was diagnosed using the 2012 revised International Restless Legs Syndrome Study Group (IRLSSG) questionnaire, with severity assessed via the IRLSSG severity rating scale. Data were analyzed using SPSS version 23, with chi-square or Fisher's exact tests for categorical variables and binary logistic regression for associations. Statistical significance was set at $p < 0.05$, and ethical approval was obtained from the MUHAS ethics committee. **Results:** A total of 348 ESKD patients on HD at MNH were recruited, with a median age of 50 (±12) years; 244 (70.1%) were male. RLS prevalence was 10.1%, and 91% had moderate to severe RLS, with a mean score of 18 (±5). Multivariate analysis identified age ≥ 60, being underweight, HIV infection, HD inadequacy (URR < 65%), and higher predialysis blood urea nitrogen (BUN) levels as independent factors associated with RLS ($p < 0.05$). **Conclusions:** Approximately 10% of ESKD patients undergoing hemodialysis at MNH experience moderate to severe RLS. Key factors include age ≥ 60, underweight status, HIV infection, HD inadequacy, and high predialysis urea levels. Regular screening for RLS and addressing these risk factors through a multidisciplinary approach involving nephrologists, nutritionists, and other healthcare professionals is recommended.

572. Ruhighira, J. J., Dionis, I., Munyogwa, M., *et al*... (2025). High-calorie low-protein dietary pattern among overweight and obese pregnant women in Tanzania. *Clinical Nutrition Open Science*, Vol. *60*. Doi: 10.1016/j.nutos.2025.01.01.

Abstract

Background & Aims: Traditionally, addressing underweight during pregnancy has been a priority in low-middle-income countries, including Tanzania. However, due to ongoing lifestyle and socioeconomic transitions, increasing rates of overweight and obesity have created a double burden of malnutrition (undernutrition and overnutrition). As a result of this transition, pregnancy-related weight gain tends to be excessive among women who are overweight or obese and does not adequately reverse after childbirth. This study aimed to explore the dietary patterns and macronutrient intakes of pregnant women with pre-pregnancy overweight or obesity and compare them with their normal-weight counterparts**. Methods:** We consecutively recruited 242 pregnant women attending antenatal clinics in Dodoma, Tanzania. Dietary intake and patterns were assessed using 179-item food frequency questionnaires (FFQ). The Tanzanian food composition tables were then used to calculate nutrient and energy intake. We used principal component analysis (PCA) to identify dietary patterns. Energy and nutrient intake comparisons were made using the Mann–Whitney U test for independent analysis of medians and the Wilcoxon matched-pairs signed-rank test. Proportions were used to categories protein, carbohydrate, and fat intakes below, within, or beyond recommendations**. Results:** We identified six dietary patterns that accounted for 63% of the total variance in descending order of contribution as follows: nuts-cereals-legumes (24%); roots–plantains–fruits (10%); poultry–milky–meat (9%); fats-alcohol-eggs (8%); soda–sweets–meat (7%); vegetables–fish–legumes (6%). Energy intake was higher than recommended ($z = 6$, $P < 0.001$), with % carbohydrate contribution higher than recommended among most participants (81%, n = 197). Although patterns rich in poultry, dairy, and meat were relatively more common among overweight and obese than normal–weight women, about 28% of them had a protein intake below the recommended**. Conclusions:** Overweight and obese participants had a higher caloric intake with a greater % of carbohydrate contribution than recommended, and others consumed alcohol during pregnancy. A substantial proportion had a protein intake below the recommended. ***Keywords****: Obesity Overweight Pregnancy Calorie Protein Alcohol Diet PCA*

573. Ruhighira, J.J., Dionis, I., Tungu, A.M., *et al*... (2025). Physical activities and cardiometabolic profiles of African overweight and obese pregnant women. *BMC Pregnancy and Childbirth*, Vol. 25(1). Doi:10.6027/Nord2014-002.

Abstract

Background: Pregnancy triggers physiological adjustments through hormonal changes, supporting foetal growth and preparation for labour. Becoming more pronounced with excessive weight, these changes may trigger pathophysiological changes and unmask pre-existing disease conditions. In developing countries, many pregnant women experience either inadequate or excessive weight gain and may present with perturbed metabolism. Lifestyle interventions, including regular physical activity, are important but often overlooked in these settings. Context-specific data on physical activity and cardiometabolic profile of overweight and obese pregnant

women are limited in sub–Saharan Africa, specifically Tanzania. The current analysis aimed to determine the relationship between pre-pregnancy overweight/obesity, pregnancy physical activity, and cardiometabolic factors among pregnant women. **Methods:** This cross-sectional study involving 243 pregnant women aged 18–35 was conducted in selected antenatal clinics in Dodoma, of whom 37% (n = 91) were overweight or obese. The current analysis assessed physical activity, anthropometric, and cardiometabolic parameters and compared them between overweight/obese and normal-weight participants. **Results:** Overweight and obese pregnant women demonstrated significantly lower levels of physical activity across various domains, including overall physical activity ($p < 0.001$) and median METs (metabolic equivalent of tasks) minutes per week ($p < 0.001$) compared with their normal weight counterparts. In particular, they had lower median METs obtained from the occupational domain ($p = 0.037$). Additionally, the same group engaged less in exercise or leisure time physical activities ($p = 0.014$), with a lower percentage of contribution to total METs minutes per week obtained from these activities ($p = 0.002$). Furthermore, overweight or obese participants exhibited higher systolic blood pressure ($p < 0.001$), diastolic blood pressure ($p = 0.008$), haemoglobin levels ($p < 0.001$), fasting blood glucose levels ($p = 0.005$), serum triglycerides levels ($p = 0.012$), and total cholesterol levels ($t(234) = 1.98$, $p = 0.048$) than their normal–weight counterparts. **Conclusion and recommendations:** Overweight and obese pregnant women showed lower physical activity levels, with low levels of both occupational and leisure time (exercise) physical activities, possibly explaining the observed cardio metabolic perturbation in this group. An intervention aiming at promoting physical activity and enhancing cardiometabolic health among this group is necessary.

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574. Rwegerera, F., Mwenesi, M., Njiro, B.J., *et al.*.. (2025). The COVID-19 Vaccination Rollout in Tanzania: The Role of Coordination in Its Success. *Vaccines*, Vol. 13(5). Doi:10.3390/vaccines13050484.

Abstract

Background: The national rollout of a vaccine is a complex and significant undertaking, made more challenging when the health system is experiencing shock, such as in a pandemic. Tanzania had relative success in its COVID-19 vaccination rollout compared to other African countries. Objectives: To better understand factors that contributed to this success, we examined the role of coordination (one of the six immunization system building blocks) on the outcomes of the national vaccine rollout. **Methods:** We obtained qualitative information from the published literature, COVID-19 vaccination program documents for Tanzania Mainland and Zanzibar, and reports from two documentation workshops with national, regional, and district stakeholders from the government, partners, academia, and civil society. Triangulating this information, we describe the COVID-19 vaccination coordination structure, the roles and responsibilities of its members, and the changes in their engagement and activities over the 18 months following the introduction of the COVID-19 vaccine. We also obtained quantitative data from the CHANJOCOVID system to analyze time trends in national COVID-19 vaccine coverage rates for the period August 2021 to December 2022. **Results:** We found that Tanzania had a multi-level, multi-partner integrated coordination mechanism that provided strategic direction, oversight, and guidance for the vaccination rollout. The coordination structure was initially weak but strengthened over time.

Based on the level of coordination activities undertaken, we identified three periods marking different strengths of the coordination mechanisms, which corresponded with different trends in vaccination coverage in the mainland. In the first period (July–December 2021), the coordination mechanism was weak, and vaccine coverage was low, with only 3% of the target population vaccinated on the mainland. In the second period (January–May 2022), as stakeholder engagement expanded and the coordination mechanism improved, vaccine coverage rose from 4% to 25%. In the third period (June–December 2022), coordination was further strengthened, and vaccination strategies were intensified; a corresponding increase in vaccine uptake was observed, with coverage reaching 100% of the target population. **Conclusions:** Qualitative insights from the three time periods suggest a positive association between coordination strength and COVID-19 vaccine coverage. Coordination fostered collaboration, enhanced stakeholder engagement, and facilitated data-driven decision-making. This enabled Tanzania to overcome complex challenges and achieve significant progress in vaccination coverage. Strong coordination and effective collaboration among stakeholders are essential mechanisms for optimizing vaccine delivery resources and ensuring the equitable distribution and uptake of vaccines in Tanzania.

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575. Rweyemamu, R.R., Kamata, C.C., Dionis, I., *et al*... (2025). Uptake of voluntary medical male circumcision services among young adults in rural Tanzania: a cross-sectional study of willingness. *AIDS care*, Vol. 37(10). Doi:10.1080/09540121.2025.2540337.

Abstract

The World Health Organization (WHO) and its member states, particularly in Eastern and Southern Africa, have implemented various strategies to increase male circumcision coverage. Despite notable progress, the target has yet to be met, raising concerns about the willingness of young men to undergo the procedure. This study aimed to assess the willingness of young male adults in rural Tanzania to undergo circumcision. A community-based cross-sectional study was conducted in May and June 2022 in the Mbarali district of the Mbeya region, southwestern Tanzania. A total of 135 uncircumcised young men aged 18–24 years were enrolled. A structured questionnaire was used to assess their willingness to undergo circumcision and the reasons influencing their decision. Data were analyzed using SPSS version 23. The majority of participants (87, 64.4%) were aged 21–24 years, and 97 (71.9%) were unmarried. Most respondents (94, 69.6%) expressed a willingness to undergo circumcision. Besides, 41(80.4%) expressed concern about time spent and 46(76.7%) said fear of HIV testing was not a problem. Conversely, being married and knowing that circumcision improves sexual pleasure and penile hygiene significantly ($p < 0.05$) increased willingness. To enhance the uptake of male circumcision services, age-targeted counselling and awareness campaigns are recommended.

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576. Said J., Salim, N., Kunambi, P.P., *et al*… (2025). Prevalence and factors associated with hypertension among children attending pre-schools in Dar es Salaam, Tanzania. *Italian Journal of Pediatrics*, Vol. 51(84). Doi:10.1186/s13052-025-01841-y.

Abstract

Background: Childhood hypertension has become a public health problem due to its increasing prevalence and complications; the high prevalence is noted to mirror an increase in obesity among children. Hypertension in children is frequently undiagnosed due to challenges in getting appropriate cuff sizes and interpreting the readings. Several studies have been carried out among children however, most of the available information is focused on hypertension among older children and adolescents. **Methods:** A cross-sectional study was conducted in 2 districts of the Dar es Salaam region, namely Ilala and Kinondoni, from October to November 2020. Children aged 2–5 years attending pre-schools in these districts meeting the inclusion criteria and whose parent/guardian signed informed consent were included. Questionnaires were used to collect socio-demographic characteristics; anthropometric and three oscillometric single-occasion blood pressure measurements were taken. The average blood pressure was compared to the standard charts for age and sex provided by the American Academy of Pediatrics in 2017 to determine the blood pressure category of the child. **Results:** A total of 1083 children fulfilled the eligibility criteria and were enrolled into the study, 51.3% (556/1083) of participants were males and the median age was 4 years (IQR 3–5). Blood pressures for 252 (23.3%) participants were in the high blood pressure range (19.8% with elevated blood pressure and 3.5% with hypertension). No significant gender difference was observed among those with high blood pressure. Factors that were noted to be significantly associated with elevated blood pressure included low birth weight ($p = 0.036$), increasing age ($p = 0.032$), and body mass index ($p < 0.001$). **Conclusion:** High prevalence of elevated blood pressure in this population of pre-school-aged children is alarming. Low birth weight, increasing age, and body mass index were significantly associated with elevated blood pressure.

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577. Sajigwa, C., Urio, F.H., Mbugi, E.V. (2025). Dynamics of Viral Rhinitis Incidences in the COVID-19 Pandemic Era Following Adopted Preventive and Control Measures to Coronavirus in Tanzania: A Lesson to Learn. *East Africa Science,* Vol. *7*(1). Doi.org/10.24248/easci. v7i1.110.

Abstract

Background: Coronavirus disease 19 (COVID-19) is a highly contagious disease caused by a virus belonging to a large family of viruses called coronaviruses, namely severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which emerged in December 2019 in Wuhan, China. The disease has resulted in millions of human deaths worldwide to date. Different countries in the world have implemented various preventive measures against COVID-19, like social distancing, lockdown and mask wearing. These measures, apart from COVID-19, can cross prevent person-to-person transmission of other upper-respiratory conditions, including viral rhinitis (Common cold). This study aimed to assess the impact of COVID-19 preventive measures in the control of viral rhinitis and its potential consequences. **Methods:** The study was conducted at Muhimbili University of Health and Allied Sciences in Dar es Salaam, involving 384 university students and healthcare workers purposively selected from two Higher Learning Institutions, the Muhimbili University of Health and Allied Sciences (MUHAS) and St. Joseph University in Tanzania (SJUIT). In addition, two referral hospitals, namely, Mwananyamala Regional Referral Hospital (MRRH) and Temeke Regional Referral Hospital (TRRH) to gather information from healthcare

workers. The data was collected using closed and open-ended questionnaires, entered, cleaned and analysed using a IBM SPSS Statistics for Windows version 24.0 (IBM Corp, Armonk, NY, USA). **Results:** The annual incidences of viral rhinitis during the COVID-19 pandemic were found to be lower than those before the pandemic during which a total of 163 (47.4%) respondents reported to have suffered more than two episodes of viral rhinitis. About 216 (56%) respondents reported having practised social distancing, while 43 (11%) reported not to have adhered to hand hygiene practice while less than one third, 103 (26%) of the respondents reported practising steaming, while 78 (20%) used traditional medicines. None of the preventive measures showed statistically significant relationship with viral rhinitis $p<0.05$. **Conclusion:** While the use of preventive measures against COVID-19 might be unique, and considering their similarity with those of the common cold (viral rhinitis) prevention, the study has shown that if they are observed, particularly the face masks, they may reduce person-to-person transmission of airborne conditions. Therefore, we recommend instituting the use of masks and all hygienic measures in situations where upper respiratory infection of any source is suspected, to limit spread to others from acquiring the infection, particularly in large gatherings.

578. Sakurai, S., Mwilike, B., Horiuchi, S., *et al*... (2025). Effects of a Tanzanian prenatal group education program about preeclampsia/eclampsia: A quasi-experimental study. *Japan Journal of Nursing Science,* Vol. 22(2). Doi:10.1111/jjns.12652.

Abstract

Background: Aim: This study examined the effects of a prenatal group education program in Tanzania, which was focused on preeclampsia/eclampsia according to knowledge, behavioral intention, Pregnancy-Related Empowerment Scale, satisfaction, and the incidence of preeclampsia. **Methods:** The study was conducted in two district hospitals in Tanzania and used a facility-based pre-post quasi-experimental design with concurrent control. The prenatal group education program was developed to focus on preeclampsia/eclampsia and consisted of lectures, discussions, and review sessions directed at participatory group education. The intervention group participated in a midwife-facilitated prenatal group education program, whereas the control group received routine care. Data were collected through questionnaires before the intervention and 1 month later. A descriptive analysis of the data was performed. **Results:** The study analyzed 95 pregnant women within an intervention group ($n = 48$) and a control group ($n = 47$). At the 1-month post-test, statistically significant differences were observed between the intervention and control groups in the knowledge score (mean = 3.8, SD = 3.6 vs.mean = −0.8, SD = 3.1, $p < .001$) and satisfaction score (mean = 4.9 vs. mean = 4.6, $p = .032$). Between the two groups, there were no significant differences in the scores of behavioral intention, Pregnancy-Related Empowerment Scale, and the incidence of preeclampsia. **Conclusion:** The prenatal group education program increased the knowledge level regarding preeclampsia and gave higher satisfaction among pregnant women. Knowledge was retained for at least 1 month. Continuity in the implementation of this program is recommended**.**

579. Saleem, H.T., Noon, K., Nwakama, C., *et al*… (2025). Family Perspectives on Stigma Toward Women Who Use Drugs in Tanzania. *Issues in Mental Health Nursing,* Vol. 46. Doi:10.1080/01612840.2024.2445008.

Abstract

The stigma surrounding drug use adversely affects the health and well-being of people who use drugs. With projected increases in drug use in Africa over the next decade, understanding public perceptions of drug use is critical. This study explores perceptions and attitudes toward illicit drug use from the viewpoint of the families of women who use drugs. In March 2019, we conducted semi-structured interviews with 19 family members of women who use drugs in Dar es Salaam, Tanzania. The interviews included a closed-ended survey and open-ended questions about drug use attitudes. We thematically analyzed open-ended responses and summarized survey response frequencies. Three key themes emerged: (1) disapproval and stigma regarding drug use, (2) increased stigma and social consequences for women who use drugs, and (3) empathy and a call for support and intervention. Participants viewed people who use drugs negatively, associating them with danger and criminality. Women faced harsher judgment due to cultural expectations of femininity and motherhood. Despite these negative perceptions and attitudes, participants wanted to support people who use drugs, advocating for better access to treatment. Culturally tailored, gender-sensitive interventions are essential to reduce stigma and improve outcomes for these women and their families.

580. Salega, H.A., Kamori, D., Kibwana, U.O., *et al*... (2025). Faecal Carriage of Multidrug Resistant Enterobacterales and Associated Factors among Neonates Admitted at Tertiary Hospital in Dar es Salaam, Tanzania. *The East African Health Research Journal,* Vol. 8(3). Doi: 10.24248/eahrj. v8i3.804.

Abstract

Background: Hospitalised neonates are at increased risk of carrying extended-spectrum β-lactamase-producing Enterobacterales (ESBL-PE) and carbapenemase-producing Enterobacterales (CPE), possibly leading to invasive infections. This study determined the faecal carriage of ESBL-PE, CPE, and associated factors among neonates at Muhimbili National Hospital (MNH). **Methods:** A hospital-based cross-sectional study was conducted among neonates aged ≤ 28 days admitted at MNH. The participants' data and rectal swab samples were collected. Samples were processed to detect ESBL-PE and CPE. Results were confirmed using the double-disc diffusion synergy test and modified carbapenem inactivation method, respectively. An antimicrobial susceptibility test was performed using the Kirby-Bauer disk diffusion method. **Results:** Three hundred forty neonates with a median age of 3 days (IQR: 2–9) were enrolled. The carriage rate of ESBL-E and CPE was 39.4% (134/340) and 1.8% (6/340), respectively. Klebsiella pneumoniae (66.9%) and Escherichia coli (66.7%) were the common isolates for ESBL-PE and CPE, respectively. The factors independently associated with ESBL-PE carriage were antibiotic use (aOR 2.73, 95% CI: 1.38–5.39, p=.04), age increase (aOR 1.09, 95% CI: 1.02–1.15, p=.006), prolonged hospitalisation (aOR 2.92, 95% CI: 1.17–7.29, p=.02), and neonate-sucking their fingers (aOR 2.98, 95% CI: 1.04–8.58, p=.04). The study observed a trend of CPE carriage toward

neonates with prolonged hospitalisation (p=.05). ESBL-PE low resistance was observed to meropenem (0.9%), amikacin (2.7%-6.7%), and gentamicin (19.4% to 100 %). **Conclusions:** The study revealed a relatively high carriage rate of multidrug-resistant Enterobacterales among neonates admitted to a tertiary hospital. These findings underscore the importance of continuous surveillance of ESBL-PE and CPE to prevent infections and limit their potential transmission within hospital settings and the community.

581. Salome, M.M., Lilian, T.M., Godwin, P., *et al*… (2025). Experience of Community Leader's Involvement in The Participants' Informed Consent Process: A Case of Malaria Clinical Trials Conducted in Tanzania. *Tanzania Medical Journal*, Vol. 36(1). Doi:10.4314/38theq22.

Abstract

Background: International ethical guidelines for biomedical research involving human subjects recognize the importance of obtaining permission from community leaders before conducting research in low-resource countries. The guidelines emphasize that community permission does not replace the requirement for individual informed consent. However, there is limited understanding of the role of community leaders' play in this process. This study aimed to explore the experiences of community leaders' involvement in the informed consent process during malaria clinical trial conducted in Tanzania. **Methods:** This exploratory case study was conducted in three purposively selected villages in Tanga region. In-depth interviews were conducted with community leaders using a semi-structured interview guide and all interviews were audio-recorded using a digital recorder. Data were organized using NVivo software, and thematic analysis was applied. **Results:** The study identified key themes in involving community leaders during obtaining consent. A clear demarcation of responsibilities between community leaders and researchers is necessary to minimize the potential influence of leaders' authority over community. shared information raised concerns about maintaining participants confidentiality. **Conclusion and Recommendation:** The findings suggest that study information and clear demarcation of responsibilities between community leaders and researchers should be communicated clearly from beginning to end. This promotes trust, supports voluntary participation, ensures confidentiality, and provides a clear understanding of the risks and benefits involved.

Keywords: *Community leaders, Roles, Informed consent, Power of authority.*

582. Sambayi, G., Mwakalukwa, R., Adamu, R., *et al*... (2025). Ethnopharmacological survey of medicinal plants traditionally used in Tanzania *for* the management of sickle cell disease. *Phytochemistry Letters*. Vol. 69. Doi: 10.1016/j.phytol.2025.103403.

Abstract

Introduction: Previous ethnopharmacological and bioactivity studies reported the use of medicinal plants in the management of sickle cell disease (SCD) elsewhere. The use of medicinal plants against infectious and non-infectious diseases was reported, but little is known about medicinal plants used to manage SCD in Tanzania**. Aim:** This study aims to document medicinal plants used by traditional health practitioners (THPs) in managing SCD in the Mwanza and Mara

regions in Tanzania**. Materials & Methods:** In-person, in-depth interviews were conducted with THPs using semi- structured, open-ended questions, and medicinal plants traditionally used to manage SCD were documented. The interview was followed by a field visit to collect plant specimens**. Results:** In this study, 37 THPs were interviewed. A total of 102 medicinal plant species from 39 families were documented. Plants from the family Fabaceae were the most frequently reported, comprising 24 species (24 %). Roots (40 %) and leaves (33 %) were the most frequently used plant parts, and decoction was the most common preparation method (55 %). The vast majority of herbal treatments were recommended for oral administration (90 %). A literature review revealed that some medicinal plants have similar ethnomedical uses elsewhere and exhibit anti-sickling activity, while other medicinal plants have been reported to have antiplasmodial, anti-inflammatory, antioxidant, analgesic, antipyretic, and antimicrobial activities that are beneficial in SCD patients**. Conclusion:** This is the first ethnopharmacological survey on medicinal plants used in Tanzania for the management of SCD. The results provide preliminary support for the traditional use of plants and starting point in the search for new bioactive phytochemicals for the management of SCD.

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583. Sangeda, R. Z., Nkya, S., Masamu, U., *et al*… (2025). Funding Trends and Gender Disparities in Tanzanian Biomedical Research: Insights from Global Health Funding Databases. *Cureus*, Vol. 17(10). Doi: 10.7759/cureus. 94912.

Abstract

Background: Research funding is crucial for advancing scientific knowledge and innovation. Understanding patterns and trends in research funding, including potential gender disparities, can provide valuable insights for policymakers, funding agencies, and researchers. This study aimed to analyze the distribution of research funding in Tanzania, identify major contributors, uncover trends over the past years, and examine gender disparities among principal investigators (PIs)**. Methods:** Data from the National Institutes of Health (NIH) funding database and World RePORT were utilized. Data cleaning and preprocessing ensured consistency and accuracy, with funding amounts converted to common currency (USD) for analysis. Statistical and trend analyses were performed to identify key patterns, focusing on funding distribution by research organization, funding organization, fiscal year, type of record, and PI gender. **Results:** A total of $218,409,329 were distributed across 438 projects led by 324 unique PIs. Male PIs accounted for 228 (70.4%), females for 91 (28.1%), and five (1.5%) were of unspecified gender. Collaborative projects comprised 374 entries ($158,121,528.60), and direct funding accounted for 64 projects ($60,287,799.96). The European and Developing Countries Clinical Trials Partnership contributed the most ($165,598,586; 75.8%), followed by the Wellcome Trust ($12,282,858; 5.6%) and the European Commission ($12,017,629; 5.5%). Funding rose steadily, peaking in 2020 and 2022 at over US $40 million. The National Institute for Medical Research received the highest total cost (US$95,453,357; 43.7%). Male PIs led more projects and received $49,038,802, compared to $22,475,127 for female PIs. In 2023, however, female PIs received more funding ($5,517,171) than male PIs ($4,354,089), reversing previous trends. **Conclusions:** Research funding in Tanzania remains concentrated among a few institutions and is dominated by one major donor. Although overall funding has increased, significant gender disparities persist. The 2023 shift

toward greater female PI funding is promising but requires sustained policy attention. These insights can inform equitable research and investment strategies for Tanzania.

584. Sangeda, R.Z., Kadinde, A.W., Khea, A., *et al*... (2025). Benchmarking Pre-National Action Plan Systemic Antimicrobial Consumption in Tanzania, 1998-2005: A Historical Longitudinal Defined Daily Dose Analysis. *Cureus*, Vol. 17(12).

Abstract

Background: Antimicrobial consumption (AMC) data in Tanzania prior to the 2017 National Action Plan on Antimicrobial Resistance (NAP-AMR) are scarce, limiting our understanding of historical usage patterns. **Objective:** To establish a national baseline of systemic AMC in Tanzania from 1998 to 2005 using the World Health Organization's Defined Daily Dose (DDD) methodology. **Methods**: A retrospective longitudinal analysis of antimicrobial import records from the Tanzania Medicines and Medical Devices Authority was conducted, expressing consumption as DDD per 1,000 inhabitants per day (DID). Results Between 1998 and 2005, annual AMC ranged from 0.45 to 13.32 DID, predominantly antibacterials (82.6%), with cumulative consumption of 51.9 DID. Oral formulations and Access category antibiotics dominated usage. **Conclusion**: These historical AMC estimates provide a valuable benchmark for contextualizing and informing future antimicrobial stewardship efforts in Tanzania

585. Sango, S.P., Chamba, C., Nasser, A., *et al*… (2025). Pregnancy-associated venous thromboembolism in sub-Saharan Africa: a case-control study and descriptive analysis of clinical phenotypes. *Research and Practice in Thrombosis and Haemostasis*, Vol. 9. Doi: 10.1016/j.rpth.2025.103195.

Abstract

Background: Venous thromboembolism (VTE) is a leading cause of maternal mortality worldwide, yet data on pregnancy-associated VTE (PA-VTE) in sub-Saharan Africa remain limited. **Objectives:** This study aimed to identify clinical predictors and describe the phenotypic characteristics of PA-VTE in a Tanzanian referral setting. **Methods:** We conducted a retrospective case-control study at Muhimbili National Hospital from 2016 to 2024. Cases were pregnant or postpartum women (≤6 weeks) with objectively confirmed VTE. Controls were matched 1:2 on gestational stage. Due to sparse data in several matched sets, multivariable analysis was conducted using Firth penalized logistic regression to account for separation and small-sample bias. VTE cases were further characterized descriptively. **Results:** Of 321 women included (107 cases and 214 controls), independent predictors of PA-VTE were a history of VTE (adjusted odds ratio [aOR], 122; 95% CI, 2.66-43,361), gross varicose veins (aOR, 31.5; 95% CI, 5.98-306), and stillbirth (aOR, 15.2; 95% CI, 1.75-213), with wide CIs reflecting small sample sizes. DVT accounted for 73% of cases, predominantly proximal and left-sided. Pulmonary embolism was submassive or massive in over one-third of cases. Only 2.8% of women received any thromboprophylaxis—all postpartum—and thrombophilia testing was rarely performed (3.7%). **Conclusion:** Traditional risk factors—particularly prior VTE, varicose veins, and stillbirth—remain highly relevant in this setting. Uptake of antenatal thromboprophylaxis was very low,

highlighting major care gaps. While causality cannot be inferred, these findings underscore the need for larger studies to confirm risk associations and provide foundational evidence. Interventions should focus on developing local guidelines, strengthening clinician awareness, and integrating context-specific risk assessment tools into obstetric care in sub-Saharan Africa.

586. Santos, R.D., Ray, K.K., De Bacquer, D., *et al*… (2025). Frequency of residual combined dyslipidemia and hypertriglyceridemia in patients with coronary heart disease in 13 countries across 6 WHO *Regions*: Results from INTERASPIRE. Vol. 405. Doi: 10.1016/j.atherosclerosis.2025.119215.

Abstract

Background and aims: Hypertriglyceridemia (HTG) is independently associated with risk of atherosclerotic events, even when LDL-cholesterol levels appear controlled. This INTERASPIRE study determined the frequency of HTG and residual combined dyslipidemia and their related factors in patients with coronary heart disease (CHD) from 13 countries across six World Health Organization (WHO) regions. **Methods:** Participants with CHD underwent a standardized study interview and examination, including a centralized analysis of fasting blood samples. Elevated triglyceride (TG) and LDL-cholesterol were defined as ≥ 1.7 mmol/L and 1.8 mmol/L, respectively. Elevations in both were considered combined dyslipidemia. **Results:** Lipid profiles were available for 4069 patients. The mean age was 60.1 years (21.1 % women, 12.6 % smokers, 24 % obesity by body mass index [BMI], 61 % hypertension, and 44 % self-reported diabetes). Participants were evaluated 1.05 (0.76–1.45) years after their index CHD hospitalization. Overall, 12.7 % used no lipid-lowering therapies (LLT), 50.0 % used high-dose statins, and 11.8 % used combination therapies. Specific TG-lowering therapies were used by 2.3 %. One-third of patients had HTG, and 24.6 % had combined dyslipidemia. HTG was seen in all countries, but median TG values varied, with higher values among those not using LLT. HTG was independently associated with female sex, smoking, BMI, blood pressure, and LDL-cholesterol. HTG was inversely associated with HDL-cholesterol. **Conclusions:** HTG and residual combined dyslipidemia are common, although with wide variability between countries. A healthier lifestyle, weight reduction, greater use of combination therapy, and evidence-based TG-lowering treatments are necessary to reduce the risks of HTG and combined dyslipidemia.

587. Saronga, H. P., Dwarkanath, P., Cui, H., *et al*… (2025). Low-dose calcium supplementation during pregnancy in low and middle-income countries: A cost-effectiveness analysis. *PLOS Global Public Health*, Vol. 5(9). Doi: 10.1371/journal.pgph.0004002.

Abstract

Calcium supplementation during pregnancy can reduce the risk of preeclampsia and preterm birth. Few countries have implemented WHO-recommended high-dose calcium supplementation (1500–2000mg/day), due to adherence and cost concerns. However, low-dose calcium supplementation (one 500mg tablet daily) has recently been shown to be similarly efficacious as high-dose supplementation. We assessed the cost-effectiveness of low-dose calcium supplementation during

pregnancy, in low- and middle-income countries (LMICs) with low dietary calcium intake. To do so, we conducted a mathematical modelling analysis in which we estimated the lifetime health outcomes (cases, deaths, and DALYs averted) and costs of low-dose calcium supplementation provided through routine antenatal care to women giving birth in 2024, as compared to no supplementation. We assessed costs (2022 USD) from a health system perspective, including cost-savings from averted care for preeclampsia and preterm birth. This analysis showed that low-dose calcium supplementation could prevent 1.3 (95% uncertainty interval: 0.2, 2.6) million preterm births (a 10% (2, 18) reduction), 1.8 (1.0, 2.8) million preeclampsia cases (a 23% (14, 32) reduction), as well as 5.9 (1.3, 12.9) million disability-adjusted life years (DALYs). Intervention costs would be $267 (220, 318) million and produce cost-savings of $56 (26, 86) million, with incremental costs per DALY averted of $90 (38, 389) across all countries, and a return on investment of 19.1 (3.8, 39.5). The intervention was cost-effective in 119 of 129 countries modeled when compared to setting-specific cost-effectiveness thresholds. While there was substantial uncertainty in several inputs, cost-effectiveness conclusions were robust to parameter uncertainty and alternative analytic assumptions. Based on these results, low-dose calcium supplementation provided during pregnancy is cost-effective for prevention of preeclampsia and preterm birth in most LMICs.

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588. Sasi, P., Vasco, J.L., Sangeda, R.Z., *et. al*... (2025). Pharmacoepidemiology of Cardiovascular Medicines Used Among Inpatients at a Tertiary Care Hospital in Tanzania, 2016-2022. *medRxiv*, 2025-11. Doi:10.64898/2025.11.30.25341284.

Abstract

Introduction: Cardiovascular diseases remain a major cause of morbidity and mortality in sub-Saharan Africa; however, little is known about inpatient cardiovascular medicine utilisation in Tanzania. This study quantified cardiovascular medicine utilisation patterns at a national cardiac referral centre using the standardised WHO ATC/DDD methodology. **Methods:** A retrospective longitudinal pharmacoepidemiologic study was conducted using inpatient prescription data from the Jakaya Kikwete Cardiac Institute (JKCI) for the fiscal years 2016/2017 to 2021/2022. Non-medicinal items and topical formulations were excluded from the analyses. Utilisation was expressed as Defined Daily Doses (DDD) per 100 bed-days using the WHO ATC/DDD methodology. Descriptive statistics and non-parametric tests were performed using SPSS version 26. **Results:** Of the 290,591 prescription records screened, 224,290 were eligible following the exclusion of 64,781 non-medicinal items and 1,520 topical agents. Cardiovascular medicines (ATC class C) accounted for 99,634 (44.4%) of all prescriptions, followed by alimentary tract and metabolism agents (18.1%). The prescribing volumes increased annually and peaked in 2021/2022. Furosemide (C03CA01), spironolactone (C03DA01) and paracetamol (N02BE01) were the three most frequently prescribed medicines. The 12 most commonly used medicines represented approximately half of all the prescriptions. **Conclusion:** Cardiovascular medicines accounted for nearly half of all inpatient prescriptions, reflecting the substantial clinical demand and disease burden associated with cardiovascular conditions. Utilisation was dominated by loop and potassium-sparing diuretics, highlighting their central role in inpatient cardiac care. Routine

surveillance using ATC/DDD metrics should be institutionalized to guide procurement, prescribing audits, and patient safety monitoring.

589. Schell, C.O., Kayambankadzanja, R.K., Beane, A., *et al*… (2025). Hospital burden of critical illness across global settings: a point prevalence and cohort study in Malawi, Sri Lanka and Sweden. *BMJ Global Health*, Vol. 10(3). Doi:10.1136/bmjgh-2024-017119.

Abstract

Introduction: The burden of critical illness may have been underestimated. Previous analyses have used data from intensive care units (ICUs) only, and there is a lack of evidence about where in hospitals critically ill patients receive care. This study aims to determine the burden of critical illness among adult inpatients across hospitals in different global settings. **Methods:** We performed a prospective, observational, hospital-based, point prevalence and cohort study in countries of different socioeconomic levels: Malawi, Sri Lanka and Sweden. On specific days, all adult in-patients in the eight study hospitals were examined by the study team for the presence of critical illness and followed up for hospital mortality. Patients with at least one severely deranged vital sign were classified as critically ill. The primary outcomes were the presence of critical illness and 30-day hospital mortality. In addition, we determined where the critically ill patients were being cared for and the association between critical illness and 30-day hospital mortality. **Results:** Among 3652 hospitalized patients, we found a point prevalence of critical illness of 12.0% (95% CI 11.0 to 13.1), with a hospital mortality of 18.7% (95% CI 15.3 to 22.6). The crude OR of death of critically ill patients compared with non-critically ill patients was 7.5 (95% CI 5.4 to 10.2). Of the critically ill patients, 96.1% (95% CI 93.9 to 97.6) were cared for in the general wards outside ICUs. **Conclusions:** The study has revealed a substantial burden of critical illness in hospitals from different global settings. One in eight hospital in-patients was critically ill, 19% of the critically ill died in hospital, and 96% of the critically ill patients were cared for outside of ICUs. Implementing the most feasible and low-cost critical care in general wards throughout hospitals would impact a large number of high-risk patients and has the potential to improve outcomes across all acute care specialties

590. Sebasaza, F.M., Sohal, K.S., Deoglas, D.K., *et. al*… (2025). Ocular injuries in patients with orbital fractures in a tertiary level hospital in Tanzania: A cross-sectional study. *Oman Journal of Ophthalmology*, Vol. 18(3). Doi: 10.4103/ojo.ojo_7_25.

Abstract

Background: Ocular injuries are common in patients with orbital fractures. However, in Tanzania, there is a paucity of studies investigating ocular injuries associated with orbital fractures. Hence, this study aimed to determine the ocular injuries in patients who have sustained orbital fractures in Tanzania. **Methods:** This cross-sectional study was carried out for a year at Muhimbili National Hospital. All patients who had sustained orbital fractures were recruited for the study. The questionnaire was designed to obtain patients' sociodemographic information, presenting ocular findings, and outcomes after treatment. The data were analyzed using IBM, NY, USA ® SPSS Statistics version 27. **Results:** The study included 131 patients, with 125 (95.4%) being males, and

the mean age of participants was 32.22 ± 9.87 years. All patients (100%) presented with one or more ocular injuries ranging from 1–7. Most (*n* = 40, 30.5%) had three different ocular injuries. While all patients had minor ocular injuries, only 16 (12.2%) had major ocular injuries. During follow-up postmanagement of the orbital injuries, 12 (9.2%) patients had ocular-related complications despite the management offered. **Conclusion:** The ocular injuries are evident in all patients who have sustained orbital bone fractures; however, the occurrence of major/serious ocular injury is low. Subconjunctival hemorrhage is the most frequently observed ocular injury.

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591. Seidu, T.A., Farooq, M.A., Wande, M.P., *et al*… (2025). Exploring Drug Repositioning: Enhanced Co-Delivery of Disulfiram and Celecoxib by Nanostructured Lipid Carriers for Breast Cancer Cells. *Current Drug Delivery*, Vol. 22. Doi: 10.2174/0115672018287555240426063812.

Abstract

Background: In the current era, the importance of pharmaceutical technology and research in innovating novel drugs and formulations is undeniable. **Objective:** This study aimed to produce a nanoscale drug delivery system for the simultaneous delivery of repurposed disulfiram (DSF) and celecoxib (CXB). **Methods:** The co-formulation was prepared using the emulsification-ultrasonication technique to enhance the anti-cancer activity via NLCs. The surface morphology of the optimized NLCs was examined using TEM, while physicochemical characterization was performed using FTIR, DSC, PXRD, and TGA. In-vitro cell uptake studies were conducted using the MTT assay, confocal microscopy, and flow cytometry. **Results:** The optimized DSF-CXB NLCs exhibited a mean particle size of 144.2 nm and drug loadings of 9.8% for DSF and 9.87% for CXB. The re-dispersibility index was measured at 103.26%, indicating effective dispersion. Stability analysis over 30 days confirmed the formulation's high stability. Transmission electron microscopy revealed spherical-shaped nanoparticles. Fourier transform infrared spectroscopy indicated no interaction between excipients and the formulation. Both DSC and PXRD techniques affirmed complete encapsulation of both drugs in the NLCs. In-vitro cytotoxicity of DSF-CXB NLCs exhibited a concentration-dependent increase compared to free DSF and CXB solutions in breast cancer cells. Confocal microscopy and flow cytometry studies demonstrated time-dependent internalization of the optimized formulation in 4T1 cancer cells. **Conclusion:** These results suggest that repurposing DSF and CXB NLCs holds promise as a co-delivery system for various cancers, potentially leading to improved therapeutic outcomes. **Keywords:** Disulfiram, celecoxib, nanostructure lipid carriers, combination therapy, breast, targeted delivery, cancer.

592. Selestine, L., Mwanga, A. H., Mchele, G., et al... (2025). Factors influencing clinical response to neoadjuvant therapy among Wilms tumor patients undergoing nephrectomy: a 5-year retrospective cohort study at Muhimbili National Hospital, Tanzania. *Egyptian Pediatric Association Gazette*, Vol. 73(1). Doi: 10.1186/s43054-025-00432-0.

Abstract

Background: Nephroblastoma, a prevalent pediatric cancer, can be effectively treated using a multimodal approach. Neoadjuvant chemotherapy, a component of this approach, is key to improving surgical and overall outcomes. However, response rates in sub-Saharan Africa are often suboptimal. This study aimed to identify factors influencing the response to neoadjuvant therapy in pediatric patients with Wilms tumor undergoing nephrectomy. **Methodology:** A retrospective cohort study conducted in January 2024 at a quaternary hospital in Tanzania involved 113 pediatric patients with confirmed nephroblastoma who underwent nephrectomy between January 2018 and December 2023. Clinico-demographic, pathological, and therapeutic factors were analyzed using a gamma regression model with a generalized estimating equation to assess their impact on tumor volume changes (pre- vs. post-chemotherapy). **Results:** The median age at diagnosis was 48 months (IQR: 24–60), with a 1:1 male-to-female ratio. Significant tumor volume reduction was noted post-chemotherapy (7125 cm3 (IQR: 3312–11,884) to 3621 cm3 (IQR: 1708–7798), $p < 0.001$), although 63.7% had stable disease (neither sufficient shrinkage to qualify for partial response (PR) nor sufficient increase to qualify for progressive disease (PD), taking as reference the smallest sum longest diameter (LD) since the treatment started. Volume reduction was associated with stage II disease ($\beta = -0.487$, $p = 0.023$) and a 6-week chemotherapy regimen ($\beta = -0.946$, $p = 0.011$). Progression correlated with age > 48 months ($\beta = 0.416$, $p = 0.020$), malnutrition ($\beta = 0.812$, $p = 0.023$), and prolonged illness ($\beta = 0.063$, $p = 0.003$). **Conclusion:** Neoadjuvant chemotherapy significantly reduced tumor volume, but stable disease was common. Further research is needed on optimal chemotherapy cycles and the impact of disease stage on treatment response. Prioritizing early diagnosis and tailored treatment for older and malnourished children is crucial in addressing age-related and nutritional challenges affecting therapy effectiveness. ***Keywords:*** *Clinical response, Neoadjuvant therapy, Nephrectomy, Nephroblastoma, Pediatric oncology, Tumor volume reduction, Wilms tumor, Sub-Saharan Africa*

593. Seth, M.D., Popkin-Hall, Z.R., Madebe, R.A., *et al*… (2025). Prevalence of subpatent Plasmodium falciparum infections in regions with varying transmission intensities and implications for malaria elimination in Mainland Tanzania. *Malaria Journal*, Vol. 21(101). Doi:10.1186/s12936-025-05341-6.

Abstract

Background: Subpatent Plasmodium falciparum infections, defined as infections with parasite density below the detection limit of routine malaria diagnostic tests, contribute to infectious reservoirs, sustain transmission, and cause the failure of elimination strategies in target areas. This study assessed the prevalence of subpatent P. falciparum infections and associated risk factors in 14 regions of Mainland Tanzania. **Methods:** The study used samples randomly selected from RDT-negative dried blood spots (DBS) (n = 2685/10,101) collected in 2021 at 100 health facilities

across 10 regions of Mainland Tanzania, and four communities in four additional regions. The regions were selected from four transmission strata; high (five regions), moderate (three regions), low (three regions), and very low (three regions). DNA was extracted by Tween-Chelex method, and the Pf18S rRNA gene was amplified by quantitative polymerase chain reaction (qPCR). Logistic regression analysis was used to assess the associations between age groups, sex, fever status, and transmission strata with subpatent infection status, while linear regression analysis was used to assess the association between these factors and subpatent parasite density. **Results:** Of the selected samples, 525/2685 (19.6%) were positive by qPCR for P. falciparum, and the positivity rates varied across different regions. Under-fives (aOR: 1.4, 95% CI 1.04–1.88; $p < 0.05$) from health facilities had higher odds of subpatent infections compared to other groups, while those from community surveys (aOR: 0.33, 95% CI 0.15–0.72; $p = 0.005$) had lower odds. Participants from very low transmission stratum had significantly lower odds of subpatent infection compared to those from high transmission stratum (aOR = 0.53, 95% CI = 0.37–0.78; $p < 0.01$). The log-transformed median parasite density (interquartile range) was 6.9 (5.8–8.5) parasites/μL, with significantly higher parasitaemia in the low transmission stratum compared to a very low one (11.4 vs 7.0 parasites/μL, $p < 0.001$). **Conclusion:** Even in very low transmission settings, the prevalence of subpatent infections was 13%, and in low transmission settings it was even higher at 29.4%, suggesting a substantial reservoir that is likely to perpetuate transmission but can be missed by routine malaria case management strategies. Thus, control and elimination programmes may benefit from adoption of more sensitive detection methods to ensure that a higher proportion of subpatent infections are detected.

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594. Shabani, J., Salim, N., Bohne, C., *et al*… (2025). Neonatal indicator data in Tanzania District Health Information System: evaluation of availability and quality of selected newborn indicators, 2015-2022. *BMC Pediatrics,* Vol. 23(658). Doi:10.1186/s12887-025-05417-x.

Abstract

Background: All Newborn Action Plan (ENAP) indicators are essential in monitoring neonatal healthcare coverage and quality. The District Health Information System (DHIS2), an open-source platform in over 80 countries, supports health data collection and analysis, enabling progress tracking at national and subnational levels. This study evaluates the availability and quality of maternal and newborn health indicators, explicitly focusing on ENAP indicators within Tanzania's DHIS2. **Methods:** Using the EN-MINI tool, we assessed data availability for 20 ENAP indicators by analysing their numerators and denominators in Tanzania's DHIS2 (2015–2022) across all healthcare levels. World Health Organization's (WHO) data quality framework was adapted to examine four dimensions: (a) availability of indicators, (b) completeness of indicator reporting, (c) internal consistency of related indicators, and (d) indicator plausibility by comparing DHIS2 data with population-based Demographic and Health Survey (DHS) data. **Results:** Of the 20 ENAP indicators, 14 were available in Tanzania's DHIS2, with definitions, numerators and denominators aligned with WHO standards. Between 2015 and 2022, the number of facilities reporting at least one delivery annually increased by 19% from 5,898 to 7,016. During this period, 75% to 97% of facilities consistently reported data on skilled attendance at birth and early breastfeeding initiation.

In contrast, 4% to 54% of facilities reported on maternal and newborn outcomes, including complications such as stillbirths and maternal mortality. Internal consistency was high (> 94%). However, neonatal mortality rates reported in DHIS2 were lower than those reported in Tanzania DHS for similar periods, even after a 20% adjustment to account for home births. **Conclusion:** Tanzania's DHIS2 captures many ENAP indicators; however, notable variability in data quality persists, with substantial data gaps related to maternal and newborn outcomes and complications. To address these challenges, it is crucial to strengthen routine data review, implement robust quality checks, enhance validation processes, provide targeted training, deliver constructive feedback, and conduct supportive supervision. Placing greater emphasis on using DHIS2 data to monitor progress will help identify gaps and drive improvements in data quality, ultimately supporting better maternal and newborn health outcomes.

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595. Shabani, S., Moen, B.E., Abegaz, T., *et al*… (2025). Safety Climate and Occupational Injuries in the Iron and Steel Industries in Tanzania. *International journal of environmental research and public health*, Vol. 22(9). Doi: 10.3390/ijerph22091372.

Abstract

The iron and steel industries globally have a high prevalence of occupational injuries, which need to be reduced. Obtaining safety climate information from workers assists in understanding the safety status at the workplace. This study aimed to assess the safety climate in the iron and steel industries and its association with occupational injuries. A cross-sectional study was conducted in four iron and steel industrial sites in Tanzania. Three hundred and twenty-one workers from the production lines and 50 managers/supervisors participated. The data were collected by interviews using the Kiswahili version of the Nordic Safety Climate Questionnaire (NOSACQ-50) and the modified International Labor Organization (ILO) manual on methods for occupational injuries. The managers/supervisors scored higher than the workers in five of the NOSACQ-50 dimensions. Most workers with low scores on safety climate had experienced occupational injuries. Analyses of the workers who had been injured at work showed that the dimensions 'management safety priority and ability', and 'management safety justice' were significant predictors of occupational injuries in the iron and steel industries, when adjusting for working years and working hours per day. This indicates that safety climate is a predictor of occupational injuries, and it is important to improve the safety priorities and commitments among the employees. **Keywords**: iron and steel industries; occupational injury; safety climate.

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596. Shabani, S., Moen, B.E., Deressa, W., *et al*… (2025). Prevalence of occupational injuries among workers in the iron and steel industries in Tanzania. *Annals of Global Health*, Vol. 91(1). Doi: 10.5334/aogh. 4503.

Abstract

Background: In Tanzania, iron and steel manufacturing industries are based on manual work with minor automation, as workers segregate scrap metals and add them to furnaces for melting. The

workers here are exposed to hazardous conditions, posing a risk to their health. **Objective:** To determine the prevalence of occupational injuries and possible predictors for injuries among workers in the iron and steel industries in Tanzania. **Methods:** The cross-sectional study was conducted in 2022 in Tanzania. Workers from the production lines in four iron and steel factories participated in the study. The data were collected by interviews, using a structured questionnaire modified from the International Labour Organization (ILO) manual on occupational injury statistics from household surveys and establishment surveys. Chi-squared tests and regression analyses were used. **Results:** Out of 381 invited workers, 321 participated in the study (response rate: 84). Of the respondents, 209 had experienced at least one injury that restricted them from work at least one day in the past year, giving an overall prevalence of occupational injuries of 65.1% per year. Out of the injured respondents, 135 (64.6%) reported being hospitalized or lying on the bed at home due to the injury. Working years, working hours per day, working 12-hour shifts, and their section at the workplace (rolling mill or furnace) were factors significantly associated with occupational injuries in univariate regression analyses. Working hours of more than 10 hours per day, adjusted for all other factors, gave an odds ratio of 2.54 for experiencing injuries at work, with a 95% confidence interval (1.46–4.41), while no other factors showed a significant association with injuries after adjustment. **Conclusion:** The prevalence of occupational injuries in the Tanzanian iron and steel industries was 65.1%. Working for more than 10 hours per day was a significant predictor of occupational injuries. ***Keywords:*** *Occupational injuries, Iron and steel Industries.*

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597. Shadrack, M., Ali, S.J., Andrea, R.S., *et al*... (2025). Delayed presentation of mature teratoma with umbilical perforation in a 9-years old female without congenital abdominal wall defects: A rare case report of atypical teratoma location. *International Journal of Surgery Case Reports*, Vol. 130. Doi: 10.1016/j.ijscr.2025.111285.

Abstract

Background: Mature teratomas are benign germ cell tumors that predominantly occur in gonadal regions. Extra-gonadal teratomas, especially in the umbilical region, are rare and often present significant diagnostic challenges. A delayed presentation with umbilical perforation in absence of congenital abdominal wall defects is uncommon. **Case presentation:** A 9-year-old female presented with a four-year history of progressively enlarging umbilical mass with occasional discomfort. Examination revealed a firm, pedunculated mass protruding through a perforated umbilicus. A contrasted CT scan, revealed a well-encapsulated heterogeneous mass containing calcifications, with no evidence of deep intra-abdominal involvement. Complete surgical excision of the tumor was performed. Histopathological analysis confirmed a mature teratoma. Recovery was uneventful, and follow-up showed no recurrence. **Discussion:** Umbilical teratomas are rare entities, particularly in children without congenital abnormalities. This case illustrates delayed presentation of umbilical perforation and diagnostic challenges in unusual located teratoma, emphasizing the need for high suspicious index when evaluating persistent umbilical masses. Radiology plays a critical role in differentiating these tumors from other conditions like

granulomas, infections, or congenital anomalies. Complete surgical excision is the treatment of choice. **Conclusion:** This report highlights the rarity and diagnostic complexity of mature teratomas in atypical locations. Early recognition of this rare differential diagnosis in cases of persistent umbilical symptoms is essential to prevent complications such as infection and perforation. Awareness and early intervention are critical to achieving favorable outcomes in such cases. This case contributes to the limited literature on extragonadal teratomas with umbilical perforation and the need for timely diagnosis and management.

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598. Shadrack, M., Ali, S.J., Rwamuyagaza, N.S., *et al*... (2025). A giant monocular intra-abdominal CSF pseudocyst mimicking mesenteric cyst in a shunted child with spina bifida and hydrocephalus: A case report of diagnostic challenge and surgical management. *International Journal of Surgery Case Reports*, 111678. Doi: 10.1016/j.ijscr.2025.111678.

Abstract

Background: Cerebrospinal fluid (CSF) pseudocysts are even extremely rare but potentially serious complications of ventriculoperitoneal (VP) shunts, with an incidence reported between 1 % and 4.5 % in pediatric populations. When pseudocysts mimic mesenteric cysts or present atypically, diagnostic confusion and delayed treatment may occur, especially in patients with comorbid conditions like spina bifida and hydrocephalus. **Case presentation:** We report a case of a 10-year-old male born with spina bifida who underwent early back closure and later developed communicating hydrocephalus requiring VP shunting. Following initial shunt placement on the left, malfunction prompted re-shunting on the right. At age 10, he presented with gradual, non-painful right-sided abdominal distension, low-grade intermittent fevers, and preserved bowel habits. Contrast-enhanced CT revealed a large intra-abdominal cystic mass initially suspected as a mesenteric cyst. Ultrasound-guided drainage yielded hemorrhagic fluid; cytology confirmed a benign pseudocyst. Recurrence occurred within weeks. Repeat imaging revealed the VP shunt catheter terminating in the cystic cavity. Exploratory laparotomy confirmed a giant CSF pseudocyst with the catheter tip inside. En bloc cystectomy was performed successfully. The patient recovered well and was discharged within one week. **Discussion:** CSF pseudocysts, though uncommon, should be considered in any shunted patient presenting with unexplained abdominal swelling. Misdiagnosis may delay definitive care. Literature review emphasizes the rarity of hemorrhagic pseudocysts in pediatric VP shunt recipients and highlights this case's unique association with neural tube defect and recurrent presentations. **Conclusion:** High clinical suspicion, thorough imaging, and timely surgical intervention are key in managing giant CSF pseudocysts in shunted children.

599. Shadrack, M., Ali, S.J., Salim, M.S., *et al*... (2025). Transverse colonic atresia with rectal atresia in a neonate. A rare case of double-site intestinal atresia. *International Journal of Surgery Case Reports,* Vol. 131. Doi: 10.1016/j.ijscr.2025.111385.

Abstract

Background: Colonic atresia is among the uncommon and extremely rare congenital anomalies, accounting for less than 15 % of all intestinal atresias, with an estimated incidence of 1 in 20,000 live births. Even rarer is the coexistence of colonic atresia with rectal atresia, which has been reported in only a few cases globally. These dual conditions lead to neonatal intestinal obstruction, requiring early diagnosis and surgical intervention to prevent life-threatening complications. Case presentation**: A** 2-day-old neonate presented with a grossly distended, tense abdomen and bilious vomiting. Digital rectal examination (DRE) revealed that the examiner's finger could not pass beyond 2 cm from the anal verge. Saline irrigation and enema catheter insertion failed, leading to a preoperative diagnosis of rectal atresia. Intraoperative findings revealed a dilated small intestine and grossly dilated colon up to the level of the distal transverse colon, with the ascending and sigmoid colon replaced by fibrous-like tissue. The affected segments were excised, necessitating a future coloanal anastomosis. A double-barrel ileostomy was performed, and a biopsy was taken from the dilated transverse colon. **Discussion:** The rarity of combined distal transverse colonic atresia and rectal atresia presents significant diagnostic and surgical challenges. The condition likely results from intrauterine vascular disruptions. Early surgical intervention offers favorable outcomes, though long-term bowel function remains a concern. **Conclusion:** This case highlights the importance of early diagnosis and tailored surgical management in complex intestinal atresias to improve survival and long-term outcomes.

600. Shadrack, M., Bayyo, N.L., Ngotta, V., *et al*… (2025). A delayed diagnosis of incomplete intestinal rotation in a 4-year-old: A case report of atypical gastrointestinal malrotation, diagnostic and management challenges in a resource-constrained health facility. *International Journal of Surgery Case Reports,* Vol. 130. Doi: 10.1016/j.ijscr.2025.111309.

Abstract

Background: Gastrointestinal malrotation is a rare congenital anomaly caused by incomplete midgut rotation during embryogenesis. It affects approximately 1 in 500 live births, with symptomatic cases seen in about 1 in 6000 children. Although over 75 % are diagnosed in the neonatal period, older children may present with nonspecific symptoms. Case presentation. **We report**: a 4-year-old male with a two-year history of recurrent bilious vomiting and intermittent

abdominal distension. Initially misdiagnosed as gastritis and treated with proton pump inhibitors without improvement, the patient underwent an abdominal ultrasound that revealed a normal mesenteric vessel but an abnormal duodenal position. The third part of the duodenum (D3) was located to the right of the superior mesenteric vessels instead of posteriorly, and localized dilation of the proximal duodenum and stomach suggested intestinal malrotation. **Discussion:** Surgical exploration via a supra-umbilical transverse incision confirmed incomplete midgut rotation. The duodenojejunal junction was abnormally positioned in a mid-right lateral orientation, and the cecum was found in the right upper anterior quadrant. Significant Ladd's bands were compressing the anterior duodenum, causing dilation, while the mesenteric base was markedly narrowed and shortened, increasing volvulus risk. A standard Ladd's procedure was performed, dividing the bands and broadening the mesenteric base. Prophylactic appendectomy was omitted because the appendix appeared normal, the corrected anatomy minimized future diagnostic confusion, and the risk of appendicitis was low. **Conclusion:** This case highlights the diagnostic value of ultrasound in older children with gastrointestinal symptoms and underscores early recognition and prompt surgical intervention. These findings greatly impact clinical decision-making and management.

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601. Shadrack, M., Kyaruzi, T.T., Mulima, S.J., *et al*... (2025). Unusual presentation of an infected Meckel's diverticulum with umbilical perforation and granulomatous lesion in a young Adult: A rare case report from a resource-constrained setting. *International Journal of Surgery Case Reports*, Vol. 135. Doi: 10.1016/j.ijscr.2025.111841.

Abstract

Background: Meckel's diverticulum (MD), a congenital anomaly of the gastrointestinal tract, affects approximately 2% of the population, but complications occur in only 4–6% of cases. Symptomatic MD is typically seen in children, with adult presentations being rare and often incidental. Umbilical complications related to persistent vitelline duct remnants are extremely uncommon in adults. **Case presentation:** A 21-year-old male without previous abdominal symptoms presented with a two-year history of dull periumbilical pain, gradually progressing to purulent umbilical discharge, low-grade fever, a small sinus opening, and granulomatous tissue. Laboratory investigations, including CBC, CRP, and liver/renal panels, were normal. Ultrasound revealed a hypoechoic tract from the umbilicus to the pelvis, suggestive of an infected urachal remnant. Exploratory laparotomy revealed a 2-inch inflamed Meckel's diverticulum located 65 cm from the ileocecal valve, connected to the umbilicus by a fibrous tract. Diverticulectomy, excision of the tract and granuloma, and umbilicoplasty were performed. Histopathology confirmed MD with chronic inflammation and no ectopic mucosa. The postoperative course was uneventful. **Discussion:** This case illustrates a rare adult complication of MD presenting as an umbilical sinus with granulomatous changes, mimicking a urachal anomaly. While adult MD typically presents with bleeding, obstruction, or inflammation, umbilical fistulation is rarely reported in adults. Early surgical exploration was essential for accurate diagnosis and treatment. **Conclusion:** Infected MD with umbilical perforation and granulomatous tissue is exceptionally rare in adults. It should be

considered in the differential diagnosis of persistent umbilical discharge. Surgical exploration can provide definitive diagnosis and curative treatment, particularly in resource-limited settings.

602. Shadrack, M., Magoda, B.P., Ngowi, N., *et al*... (2025). Surgical and diagnostic management challenges of giant Wilms tumor with intracardial and IVC thrombus extension in a 3-year-old: A rare case from a resource-limited facility involving global and local pediatric surgical teams. *International Journal of Surgery Case Reports*, Vol. 133. Doi: 1016/j.ijscr.2025.111611

Abstract

Background: Wilms tumor (nephroblastoma) is the most common renal malignancy in pediatric population, typically diagnosed before the age of 5. Vascular extension into the inferior vena cava (IVC) is seen in approximately 4–10 % of cases, but intracardiac extension, particularly into the right atrium, is exceedingly rare. Managing such advanced tumors in resource-limited settings presents major diagnostic and surgical challenges. **Case presentation:** Herein a rare case of a 3-year-old boy presenting with a giant Wilms tumor exhibiting extensive intravascular spread. Preoperative CT scans of the chest and abdomen revealed significant invasion into the IVC with thrombus extending into the right atrium. The patient underwent neoadjuvant chemotherapy, which led to marked tumor and thrombus reduction. Intraoperatively, the tumor was found adherent to the colon and left common iliac artery but was dissected without arterial injury. A massive intravascular thrombus was identified, forming a wandering thrombus, with evidence of collateral venous drainage indicating longstanding IVC obstruction. Cavotomy was performed, and the IVC was completely transected without hemodynamic compromise due to collateralization. The surgery was uneventful, and the patient recovered in the Pediatric Intensive Care Unit (PICU). **Discussion:** This case highlights the complexity of managing extensive Wilms tumor thrombus with intracardiac involvement in a low-resource environment. It underscores the role of neoadjuvant chemotherapy and surgical planning in achieving curative resection. **Conclusion:** Multidisciplinary coordination, preoperative chemotherapy, and understanding of collateral circulation allowed successful management of this rare and complex Wilms tumor casein a resource-constrained setting.

603. Shadrack, M., Mbaga, M.R., Christopher, (2025). Christmas tree pattern ileal atresia with intestinal malrotation in a 15-day-old infant: A rare dual congenital anomaly in the pediatric population. A case report *International Journal of Surgery Case Reports*, Vol. 136. Doi: 10.1016/j.ijscr.2025.111948.

Abstract

Background: Intestinal atresia is a common cause of neonatal intestinal obstruction. Type IIIb, also known as “Christmas Tree” or “Apple Peel” atresia, is a rare and severe variant characterized by the absence of the mesentery and a distal small bowel coiled around a single arterial vessel. Its incidence is low, accounting for 5–10 % of small bowel atresias. Intestinal malrotation, occurs due to failure of normal embryological gut rotation, is also rare and can predispose to volvulus and duodenal obstruction. The coexistence of both anomalies is extremely uncommon. **Case presentation:** We report a 15-day-old-male neonate with progressive abdominal distension, bilious vomiting, and hyperkalemia. Abdominal radiographs showed features of small bowel obstruction, while ultrasound was inconclusive. Exploratory laparotomy revealed type IIIb ileal atresia with the classical “Christmas Tree” configuration and collapsed distal bowels. Additionally, incomplete intestinal rotation was identified with a free-floating cecum and right-sided duodenojejunal junction. Surgical resection of the distal collapsed ileum, cecum, and part of the ascending colon was performed, followed by creation of a double stoma (ileostomy and colostomy). The postoperative period was uneventful with good stoma function. **Discussion:** This case highlights the diagnostic and surgical challenges posed by a rare dual congenital anomaly. The Christmas Tree pattern increases the risk of short bowel syndrome, while malrotation adds potential for volvulus. Early operative intervention is essential, especially in resource-limited settings. **Conclusion:** Clinicians must consider coexisting anomalies when evaluating neonatal intestinal obstruction. Prompt surgery and individualized management can lead to favorable outcomes even in complex cases.

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604. Shadrack, M., Naburi, H., Msangi, N.S., *et al*… (2025). Giant neonatal cystic hygroma with delayed airway obstruction: A case report of emergency surgery in a resource-limited setting. *International Journal of Surgery Case Reports*, Vol. 111835. Doi: 10.1016/j.ijscr.2025.111835.

Abstract

Background: Cystic hygroma is a rare congenital lymphatic malformation that typically presents in the cervicofacial region. While large lesions usually cause immediate respiratory distress, delayed airway obstruction can occur, especially in low-resource settings with limited prenatal care and neonatal support. **Case presentation:** A term male neonate was delivered in a rural setting with a large right cervicofacial mass consistent with cystic hygroma. Despite the lesion's size, he was stable at birth, with no respiratory or feeding difficulties. He was referred and transported to a tertiary center within 72 h. Imaging confirmed a macrocystic lymphatic malformation that displaces the airway but does not compress it. At three weeks, he developed progressive stridor and cyanotic episodes. Emergency surgical excision was performed by a multidisciplinary team. The lesion, containing 2.3 L of fluid, was completely removed without tracheostomy. Histopathology confirmed cystic hygroma. **Discussion:** This case highlights the unpredictable progression of cervicofacial lymphatic malformations. While initially stable, the patient developed delayed

airway compromise requiring urgent intervention. In low-resource settings, early recognition and prompt referral, coupled with coordinated surgical response, can lead to successful outcomes even in high-risk neonatal emergencies. **Conclusion:** Giant cystic hygromas in neonates may appear benign initially but can rapidly evolve into airway-threatening emergencies. This report emphasizes the critical importance of early multidisciplinary planning, referral networks, and operative readiness in resource-constrained environments.

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605. hadrack, M., Salim, M.S., Ngiloi, P., *et al*… (2025). Advancing pediatric genital reconstruction in a resource-limited setting: A case of subtunical reduction clitoroplasty in a young girl. *International Journal of Surgery Case Reports*, Vol. 131. Doi: 10.1016/j.ijscr.2025.111415.

Abstract

Background: Congenital anomalies, including clitoromegaly, are significant challenges, particularly in resource-limited settings where access to specialized care may be lacking. Clitoral enlargement is often associated with disorders of sexual differentiation, such as congenital adrenal hyperplasia. Managing such conditions in under-resourced environments requires specialized surgical expertise and a collaborative approach. Case presentation: A 3-year-old girl from a resource-limited community was referred for management of clitoromegaly diagnosed since birth. Hormonal assays showed slightly elevated 17-hydroxyprogesterone, suggesting congenital adrenal hyperplasia with a 46XX karyotype. A diagnostic laparoscopy was performed, confirming normal female internal structures. Her parents were concerned about the psychological implications. Subtunical clitoroplasty, an advanced reconstructive procedure preserving neurovascular function with labial reconstruction and vaginoplasty were recommended by visiting pediatric surgeons to restore a more typical anatomical appearance. Discussion: The subtunical clitoroplasty was successfully performed, achieving favorable aesthetic and functional outcomes. The involvement of global health surgeons from a developed country facilitated the application of advanced techniques despite local resource constraints. This case emphasizes the value of global health collaborations in providing high-quality care in resource-limited settings. Ethical considerations, including the child's future autonomy and the psychological impact of surgery, were carefully addressed with the family. Conclusion: This case highlights the successful surgical management of clitoromegaly in a child from a resource-limited setting through subtunical clitoroplasty. It underscores the importance of international collaboration in advancing pediatric genital reconstruction and the need for ongoing support for both medical and psychosocial outcomes in such cases. Further research is needed to evaluate long-term outcomes in similar settings.

606. Shayo, F.S., Kessy, A.T., Amour, M. (2025). Fidelity of health care providers on adhering to guidelines for managing neonates with respiratory distress using Silverman Anderson Severity (SAS) score tool in limited resource settings: a case study at Amana Regional Referral Hospital. *BMC Health Services Research,* Vol. 25(1). Doi:10.1016/S2214-109X (14)70280-

Abstract

Background: This case study was conducted at Amana Regional Referral Hospital, a referral hospital of Ilala District in Dar es Salaam Region, Tanzania. The aim is to assess the adherence of healthcare providers to guidelines when providing health services to neonates with respiratory distress and how supportive the health system is in limited resource settings. **Methods:** This is a case study that used a qualitative approach to data collection and analysis. A total of 16 participants participated in this study, and the sample size was reached by the principle of information saturation in the field. The study population was healthcare providers (pediatricians, general medical doctors, and nurses) working in the neonatal ward who were selected purposively depending on their experience in the neonatal ward. In-depth interviews (IDI) and an observation checklist were used for data collection from key informants, and content analysis was used to analyze the data. **Results:** The findings revealed that healthcare providers had partially adhered to guidelines in managing neonates with respiratory distress. The Silverman-Anderson Severity (SAS) score tool is recommended for decision-making in prioritizing neonates with respiratory distress to Continuous Positive Airway Pressure (CPAP) treatment in limited-resource health settings with low laboratory technology. Healthcare providers know the importance of using the SAS score tool, but this study shows partial adherence to its use. Understaffing, inadequate training, heavy workloads, and lack of motivation emerged as significant deterrents to adherence, which are within the health system, and they negatively impact healthcare providers' adherence. These challenges hindered proper monitoring, documentation, and decision-making processes for CPAP initiation and monitoring. **Conclusion:** Partial adherence to guidelines for managing neonates with respiratory distress in the context of consistent use of the SAS score tool by healthcare providers was impacted by challenges like understaffing, heavy workloads, and low motivation. Improving staffing, providing comprehensive training, and ensuring adequate equipment are recommended to enhance guideline adherence and improve neonatal care in resource-limited settings.

607. Shayo, G.A., Awadh, A., Kilima, M.A. (2025). Limited Knowledge on Asthma and Pressurized Metered-Dose Inhaler Technique Among Health Care Professionals Attending Asthmatic Patients in Dar es Salaam, Tanzania. *Journal of Aerosol Medicine and Pulmonary Drug Delivery,* Vol. 38(6). Doi:10.1089/jamp. 2024.0028.

Abstract

Introduction: Receiving wrong health education from health care professionals (HCPs) might contribute to patients' poor inhaler technique. We set out to investigate HCPs' knowledge on asthma and metered-dose inhaler technique in selected health facilities in Dar es Salaam, Tanzania.**Methods:** In a cross-sectional study done from August 2020 to February 2021,

participant's demographics were recorded. The inhaler technique was assessed using a 12-step checklist. Participants had correct inhaler technique when all the steps were performed correctly; otherwise, the technique was poor. An 18-question questionnaire for health care professional knowledge was used to assess asthma knowledge. One point was awarded to each correctly answered question, whereas a zero point was given to a wrongly answered or unanswered question. Knowledge was adequate if the score was 13/18 or higher. Chi-square was used to compare categorical data, while analysis of variance was used for comparison of mean scores for asthma knowledge and inhaler technique. A p value ≤0.05 was considered significant. **Results:** A total of 114 participants were enrolled; 57% were medical officers, and 59.6% had work experience of <5 years. The majority (53.5%) had no training on inhaler technique, and 75% had inadequate knowledge on asthma. Good asthma knowledge was associated with age ≥40 years (p = 0.039) and being a medical specialist (p = 0.002). Only 4.4% of the participants did all the steps of inhaler technique correctly. **Conclusion:** Knowledge on asthma and inhaler use technique is generally lacking among health care professionals. In-service training on asthma and inhaler demonstration should be considered for HCPs in asthma clinics.

608. Shayo, V., Nkinda, L., Masoud, S.S, *et al*... (2025). Post-COVID-19 era sero-surveillance of anti-measles IgM and IgG antibodies among asymptomatic Tanzanian children aged 3 to 15 years. Journal. *Immunologic Research,* Vol. *73*(1). Doi:10.1007/s12026-025-09645-2.

Abstract

In July 2022, during the COVID-19 era, Tanzania reported over 1500 laboratory-confirmed measles cases and more than 30 deaths, with about 80% of the children not vaccinated. The response was an intensive vaccination campaign that targeted under-fives across the country. This was a cross-sectional measles-Sero surveillance study conducted in 2024, after the COVID-19 era, in Dar es Salaam. The study involved children aged 3 to 15 years who were attending Temeke Regional Referral Hospital (TRRH) in Dar es Salaam, Tanzania, during the study period. Children were screened for anti-measles IgM and IgG antibodies using the NovaLisa Measles ELISA kit (NovaTec Immunodiagnostica GmbH® kit) and were categorized into four groups: (i) immune to measles (presence of anti-measles virus IgG and absence of anti-measles virus IgM), (ii) having reactivated measles (presence of both anti-measles virus IgG and anti-measles virus IgM), (iii) recently contracted measles (absence of anti-measles virus IgG and presence of IgM), and (iv) vulnerable (absence of both anti-measles virus IgG and anti-measles virus IgM). Of the 155 collected blood samples, 32 (20.64%) were positive for IgM, 35 (22.58%) cases were IgG-positive, and 74 (47.74%) had both IgM and IgG anti-measles antibodies. Based on these results, 35 (22.58%) children were determined to be immune, 74 (47.74%) were adjudged to have reactivated measles, 32 (20.64%) had recently contracted measles, and 14 (9.03%) were susceptible to measles infection. We found no significant association between gender, parents' education or income,

frequency of facility visits, parents' knowledge of measles, and the presence of measles symptoms with IgM and IgG antibodies. The only significant association was age and IgM, being highest (22.58%) in children aged 3–5 years ($P = 0.014$), indicating risk of contracting measles in early childhood. This study provides an update regarding the current immunity status of children against measles infection in the post-COVID-19 era. Our study clearly indicates a need to improve measles immunization activities and strategies. The Government of Tanzania, through the Ministry of Health, should work together with international agencies such as the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) and other stakeholders to ramp up efforts to meet the target of 95% vaccination coverag

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609. hija, E., Luhulla, K., Mawalla, W., Devarakonda, S., *et. al*... (2025). Myelodysplastic syndrome in Tanzania; The current status of management. *Blood*, Vol. 146 (7397). Doi: 10.1182/blood-2025-7397.

Abstract

Introduction: Myelodysplastic syndromes (MDS) are hematopoietic disorders characterized by ineffective hematopoiesis, peripheral cytopenias, dysplasia in one or more myeloid lineages, and an increased risk of developing acute myeloid leukaemia (AML). While MDS has been extensively studied over the past decade by most resource-rich countries, and the quest for advancing disease diagnostics and precision medicine is improving, this is unfortunately not the case in most low-income countries. Herein, we report the current status of the management of MDS patients evaluated at Muhimbili National Hospital (MNH), Tanzania. **Methods:** A retrospective cross-sectional study was conducted involving 63 patients diagnosed with MDS between 2018 and 2023 at MNH. Data about their clinical presentation, laboratory findings (including bone marrow biopsy results), and treatment options were extracted from electronic medical records and patient files for all adults morphologically diagnosed with MDS. Descriptive statistics, Kaplan-Meier survival analysis, and logistic regression were conducted using SPSS. **Results:** Of the 63 patients enrolled, 40 (63.5%) were male and 23 (36.5%) were female. The median age at diagnosis was 67 years (range: 50–84). The most common presenting symptoms were fatigue, reported by 57 patients (90.4%), followed by dizziness in 51 patients (80.9%). Anemia was the most frequent laboratory abnormality, identified in 90% of cases. The median hemoglobin level was 6.5 g/dL (range; 2.9-11.89), the median platelet count was 47.9×10^9/L (range: 2.67-488), and the median absolute neutrophil count was 0.83×10^9/L (range: 0.086-21.6). Transfusion dependence was noted in 34.2% of patients. Cytogenetic testing was not performed in 59 patients (96.7%) due to limited availability, and molecular testing was not available for any patients. Risk stratification using the International Prognostic Scoring System (IPSS) classified 23.8% of patients as low risk, 34.9% as intermediate risk, and 41.2% as high risk, acknowledging the limitations of this assessment in the absence of cytogenetic data. Supportive care with blood transfusions was the primary treatment for 57 patients (93.4%). Erythropoiesis-stimulating agents, lenalidomide, and cyclosporine were administered to 4.9%, 6.6%, and 8.2% of patients, respectively. Azacitidine, a hypomethylating agent, was offered to only 1.6% of patients. No patients received novel targeted therapies or hematopoietic stem cell transplantation. During the

follow-up period, a significant proportion (36.5%) were lost to follow-up. The median survival for patients ≤ 60 and > 60 years old was 6.7 and 8.3 months, respectively. At the time of this reporting, only 9.5% are confirmed to be alive. No statistically significant predictors were found for death among age, gender, cytopenia, IPSS score, or comorbidities, with the limitation of small sample size. **Conclusions:** The findings from this study reveal a concerning gap in the comprehensive management of MDS in Tanzania. Despite the diagnosis from bone marrow biopsy, the absence of cytogenetic and molecular diagnostics, as well as the lack of risk stratification, precluded the appropriate identification of clinical categories and tailored treatment for the patients. Supportive care remains the mainstay of management, with limited use of disease-specific therapies. This emphasizes the pressing need to strengthen diagnostic infrastructure and make treatment options available to align with global standards and improve the outcomes of MDS patients in low-resource settings.

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610. Shimizu, K., Luhulla, K., Msoffe, M., *et al*… (2025). Clinical characteristics and outcomes of paediatric acute lymphoblastic leukaemia in a tertiary hospital in Tanzania: a single-centre observational study. *Tropical medicine and health*, Vol. *53*(1). Doi:10.1186/s41182-025-00760-2.

Abstract

Background: A wide inequality exists between high- and low-income countries in the outcome of paediatric acute lymphoblastic leukaemia (ALL). At a tertiary-level hospital in Tanzania, multidimensional approaches have been taken to improve cancer care for children. This study aimed to update the outcomes of paediatric ALL at Muhimbili National Hospital (MNH), Tanzania from 2016 to 2020. **Methods:** We performed a retrospective chart review of children who were treated with modified UKALL2003 protocol at MNH from January 1, 2016 to December 31, 2020. We used the Cox proportional hazards model to estimate the effect of each prognostic factor on event-free survival (EFS). **Results:** We identified 202 patients who had confirmatory diagnoses of ALL and initiated treatment at MNH. Fifty-two patients (26%, 52/202) died ($n = 47$) or abandoned treatment ($n = 5$) before the end of remission induction. The main causes of death during this period were infections and bleeding complications. The median EFS was 9 months and 2-year EFS was 36%. Oedema, non-early rapid responder, and non-remission were associated with short EFS in the multivariable analysis. **Conclusions**: The number of new paediatric ALL admissions at MNH have doubled in the past decade. The prevention of early deaths is critical to improve the long-term survival of paediatric ALL in Tanzania.

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611. Shine, J., Kwara, V., Esau, D., *et al*… (2025). Exploring barriers to accessing healthy diets among pregnant women living with HIV in the Njombe region, Tanzania: A qualitative study. *PLOS Global Public* Health, Vol. 5(10). Doi: 10.1371/journal.pgph.0004438.

Abstract

Background: Proper nutrition is essential for women with HIV during pregnancy; however, information on how to access nutritious diets is scarce. This study, informed by the socio-

ecological perspectives, examines the barriers to obtaining a healthy diet among pregnant women living with HIV in the Njombe region of Tanzania. A qualitative study employing the ethnography method, using semi-structured and narrative interviews to gather information from key informant interviews, in-depth interviews, and focus group discussions engaged a diverse range of stakeholders. The analysis was done by MAXQDA software employing qualitative content analysis. Further, the thematic analysis was carried out by assigning data into relevant codes to generate categories based on the study objectives. The study found inadequate nutritional knowledge among individuals and some healthcare providers in the Njombe region. Poor emotional and physical support from spouses and family members caused pregnant women living with HIV to shoulder an excessive household workload, leading to exhaustion and stress, which hindered their ability to practice healthy dietary behaviors. The level of alcohol consumption was high, posing a risk to their health and well-being. The study identified significant barriers at the individual, community, environmental, and organizational levels that prevent pregnant women living with HIV in the Njombe region of Tanzania from accessing healthy diets. Elevating nutritional awareness within these communities is essential for improving the knowledge, skills, and motivation of pregnant women, their partners, and the wider community to embrace healthy and nutritious dietary practices. While various obstacles to healthy diets may exist, motivation and intentionality in pursuing those dietary choices are equally important. Even in the face of challenges, individuals with a strong understanding of nutrition are more likely to discover alternative strategies to maintain healthy diets.

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612. Shirima, S., Kitua, D., Mwanga, A., *et al*… (2025). Comparative Analysis of Surgical Outcomes Between Open Herniotomy and Laparoscopic Hernia Repair among Pediatric Patients with Inguinal Hernias: A Five-Year Retrospective Review at Tanzania's National Hospital. *The East African Health Research Journal*, Vol. 9(1). 144. Doi:10.24248/eahrj. v9i1.832.

Abstract

Background: Inguinal hernias (IH) are common congenital anomalies in children, requiring surgical repair to prevent complications. The primary methods for repairing pediatric IH are laparoscopic hernia repair (LHR) and open herniotomy (OH). However, there is limited evidence comparing postoperative outcomes between these approaches in Low- and Middle-Income Countries (LMICs). **Objective:** To compare postoperative outcomes between OH and LHR among pediatric patients treated at Muhimbili National Hospital (MNH) in Tanzania. **Methodology:** This 5-year retrospective comparative cohort study included 156 pediatric patients under 14 years who underwent OH or LHR at MNH from January 2019 to December 2023. Participants were selected using a hybrid random-consecutive sampling technique. LHR and OH patients were recruited at approximately a 1-to-4 ratio. Data was collected from patient records and via phone interviews. Inferential statistical tests were used to compare the outcomes of the two surgical methods. **Results:** Participants had a median age of 19.5 months (IQR 10–36) at presentation, with the majority being male (142, 91%). The median age was slightly higher in the LHR group [21.5 (IQR 12–46.5)] compared to 19 months (IQR 9–36) in the OH group. In the subgroup analysis of bilateral hernias (n=22), measures such as the duration of surgery, postoperative length of stay,

total hospitalization time, parents` satisfaction, and cosmetic rating favored LHR (p<.05). Satisfaction and cosmesis were also better with LHR for unilateral hernias (n=134) (p<.05). However, the overall recurrence rate was higher with unilateral LHR at 22.7% (5/17) compared to 4.5% (5/107) with OH, p<.05. **Conclusion:** While LHR demonstrated shorter operative time, faster recovery, and favourable cosmetic outcomes, the potential for hernia recurrence warrants careful consideration when selecting the surgical approach. Given the inherent methodological limitations, these findings should be interpreted with caution. Nevertheless, the findings provide valuable preliminary evidence that can inform future larger-scale, well-powered studies aimed at evaluating the long-term outcomes of LHR in LMIC settings.

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613. Shobanke, T., Muhihi, A., Perumal, N., *et al*… (2025). Effect of vitamin D supplementation during pregnancy and lactation on the development of infants born to Tanzanian women living with HIV: a secondary analysis of a randomized controlled trial. *BMJ open*, Vol.15(10). Doi: 10.1136/bmjopen-2024-098723.

Abstract

Background: Infants born to pregnant women living with HIV (WLHIV) are at greater risk for morbidity and mortality and may also have poorer developmental outcomes as compared with infants who are not exposed to HIV. Nutrition interventions in pregnancy may affect developmental outcomes. **Objectives:** This study evaluated the effect of maternal vitamin D supplementation on infant development outcomes. **Design:** We conducted a secondary analysis of a randomised, triple-blind, placebo-controlled trial of maternal vitamin D supplementation from June 2015 to October 2019. Setting Antenatal care clinics in Dar es Salaam, Tanzania. **Participants:** Pregnant WLHIV and their offspring. Interventions: Daily 3000 IU vitamin D3 or placebo supplements taken during pregnancy and lactation. Outcome measures Infants were assessed for cognitive, language, and motor development at 1 year of age with the Caregiver Reported Early Development Instruments (CREDI). **Results:** A total of 2167 infants were eligible, and 1312 of them completed CREDI assessments at 1 year of age. Vitamin D supplementation did not affect overall CREDI z-scores (standardised mean difference (SMD) 0.03, 95% CI −0.09, 0.15, p value 0.66). There was also no evidence of a difference between vitamin D and placebo groups in language (SMD 0.06, 95% CI −0.08, 0.21, p value 0.40), motor (SMD 0.02, 95% CI −0.09, 0.14, p value 0.69), or cognitive domain z-scores (SMD 0.05, 95% CI −0.08, 0.17, p 0.48). **Conclusions:** Maternal vitamin D supplementation during pregnancy and lactation did not affect infant development outcomes.

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614. Shuangyu, L., Hongtao, C.L., Ping, Z., *et al*… (2025). Influence of the MgO content on zirconia-toughened alumina ceramic slurry properties and sintered body microstructure. *International Journal of Applied* Ceramic *Technology,* Vol. 22(3). Doi:10.1111/ijac.15034.

Abstract

Complex ceramic components fabricated using the Vat photopolymerization ceramic 3D printing technology (VPP) exhibit mechanical anisotropy both within and between the printed layers. To address this issue, the effects of different MgO vol% on the self-leveling properties, green body forming characteristics, microstructure of the sintered bodies, and mechanical properties of ZTA ceramic slurries were investigated. The results indicate that the layered structure of the ceramic component significantly improved with the addition of 0.75 vol% MgO. The fabricated MgO–ZTA ceramic gear exhibited high surface precision, while MgO enhanced the diffusion coefficient of Al_2O_3. The results showed that the optimized matching of flexural strength (454 MPa), fracture toughness (6.97 Mpa·m1/2), microhardness (2568 HV), and density (3.975 g·cm¯3) was acquired by ZTA ceramic with a MgO content of 0.75 Vol%. The reaction at the grain boundaries produced $MgAl_2O_4$, which improved boundary strength and prevented abnormal grain growth through a pinning effect, thereby enhancing the mechanical properties of the ceramic components. An appropriate amount of MgO not only reduced the uneven distribution of ceramic particles during 3D printing but also improved the surface precision and mechanical properties of the ceramic components. The research results provide foundational data for the fabrication of high-performance ZTA ceramic parts.

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615. Simangwa, L.D., Åstrøm, A.N., Johansson, A., *et. al*… (2025). Oral health knowledge among primary school adolescents: A cross-sectional study from Maasai populated areas in Tanzania. *PLOS Global Public Health,* Vol. 5(12). Doi: 10.1371/journal.pgph.0005435.

Abstract

Oral health knowledge (OHK) is vital for maintenance of good oral health. However, poor oral health remains a significant burden for individuals globally. This study aimed to assess OHK by ethnicity and its covariates in terms of sociodemographic, clinical oral health status and dental health care utilization among primary school adolescents in rural Maasai populated areas in Tanzania. Using a two-stage cluster sample design, we randomly selected 23 out of 66 eligible rural schools in Arusha region, where a total of 906 (91.6%) adolescents aged 12–14 years accepted to participate an interview and an oral clinical examination. The interview included questions on socio-demographic factors and oral health related behavior, while clinical examination included oral hygiene status, gingival bleeding, DMFT, dental fluorosis and dental erosion. OHK was assessed by asking six questions whereby the higher the sum-score in the index, the higher the knowledge for the adolescent towards oral health. Good OHK was observed on 65.1% (590/906) of the adolescents, whereby good OHK in non-Maasai and Maasai were 79.5% and 61.4%, respectively. For the whole group of Maasais and non-Maasais, clinical variables (oral hygiene status, gingival bleeding, DMFT, dental fluorosis and dental erosion) were not associated with good OHK. However, for the non-Maasai group, having less dental fluorosis was associated with good OHK. Modified Poisson regression analysis revealed that being a non-Maasai (APR = 1.2, 95% CI: 1.1-1.4), having a mother with higher education level (APR = 1.2, 95% CI: 1.1-1.4) and ever visited a dentist for dental check-up (APR = 1.3, 95% CI: 1.1-1.4) were significant predictors for having good OHK. A slight majority of the adolescents investigated had good OHK which was significantly associated with ethnicity, maternal education level and ever visited for

dental check-up. There is a need to improve OHK, and emphasize adoption of oral disease prevention efforts.

616. Simon, S.O. (2025). Assessment of Under-Five Malnutrition Knowledge among Mothers Attending Sinza Antenatal Clinic: A Cross-Sectional Study in Ubungo District, Dar Es Salaam, Tanzania. *International Journal of Research and Scientific Innovation*, Vol. 12 (15). Doi: 10.51244/IJRSI.2025.1215PH000220.

Abstract

Background: Normal life activities necessitate a well-balanced diet and a healthy body, both of which should be developed during childhood. Malnutrition is a health problem that occurs when the body receives insufficient food nutrients. Childhood malnutrition remains a major public health challenge in Tanzania. Mothers' knowledge across specific domains such as dietary diversity, signs of malnutrition, feeding practices and prevention is critical for early detection and prevention. **Objective**: To assess domain-specific knowledge of under-five malnutrition among mothers attending the Sinza antenatal clinic and to examine associations between knowledge level and socio-demographic factors. **Methods:** A descriptive cross-sectional study was conducted among 103 mothers with children under five years attending Sinza antenatal clinic. A structured, pre-tested questionnaire assessed four knowledge domains: (1) definition and signs of malnutrition, (2) causes, (3) prevention and feeding practices including exclusive breastfeeding and complementary feeding timing, and (4) complications. The questionnaire comprised 10 scored items; each correct response scored 1 point for a maximum score of 10. Knowledge categories were defined a prior as high (≥75%, score ≥8), average (50–74%, score 5–7), and low. Ethical approval was obtained from the Muhimbili University of Health and Allied Sciences Institutional Ethical Board and written informed consent was obtained from all participants. **Results**: The mean age of participants was 25.1 years (SD = 4.5). Overall, 65.0% of mothers scored in the high knowledge category, 11.7% in the average category, and 23.3% in the low category. Domain-specific findings included: definition and signs correctly identified by 70.9% of mothers; causes by 68.9%; prevention and feeding practices by 73.6% for exclusive breastfeeding and 84.5% for appropriate complementary feeding initiation; complications by 83.5%. Knowledge level was significantly associated with maternal age ($p = 0.000$), education level ($p = 0.002$), and number of children ($p = 0.001$). **Conclusion:** Most mothers attending Sinza antenatal clinic demonstrated high overall knowledge of under-five malnutrition, but gaps remain in recognition of signs and optimal complementary feeding timing. Antenatal clinics represent an effective platform for targeted nutrition education, especially for first-time mothers and those with lower educational attainment. Integrating structured nutrition counselling into routine antenatal services could strengthen prevention and early detection of childhood malnutrition. **Keywords**: Maternal knowledge, under-five malnutrition.

617. Siril, H.N., Gitagno, D., Kaaya, S., *et al*... (2025). Generalized and COVID-19 related anxiety among Tanzanian adolescents with HIV and association with HIV outcomes during the COVID-19 pandemic. *BMC Public Health*, Vol. *25*(1). Doi:10.1186/s12889-025-23768-z.

Abstract

Background: The COVID-19 pandemic resulted in significant disruptions to HIV services globally. The impact of COVID-19 on mental wellbeing and HIV outcomes among adolescents with HIV (AWH) in Tanzania is unknown. We assessed the burden of generalized and COVID-19 related anxiety and associations with adherence to HIV care and treatment and viral load suppression (VLS) among AWH during the peak of the COVID-19 pandemic in Tanzania. **Methods**: This cross-sectional study was conducted among AWH aged 15–19 years attending 10 clinics in Dar es Salaam from April-December 2022. Trained RAs administered a questionnaire to study participants which included questions on Generalized Anxiety Disorder (GAD), COVID-19 related anxiety, and other psychosocial and physical health and support measures such as self-management and quality of physical health. HIV clinic visit adherence, viral load and sociodemographic data were abstracted from patient health records. Multivariable quasibinomial and logistic regression models examined associations of Generalized and COVID-19 related anxiety with visit adherence (attending all scheduled visits (+/- 3 days) for 12 months prior to September 2019) and HIV virologic suppression (HIV VL < 50 copies/mL), respectively. Data were analyzed using R software. **Results**: Five hundred sixty-seven AWH (48% male, median time on ART 125 (interquartile range (IQR) 79 months)) were included in this analysis. Over half (53%) attended at least 75% of their scheduled clinic visits, and 78% were HIV virologically suppressed (< 50 copies/mL). The median GAD and COVID-19-related anxiety scores were 1 [IQR: 4], and 25 [IQR: 31], respectively. Only 2% scored moderate-severe generalized anxiety (score 10–21). We found no significant associations between COVID-19 related anxiety [adjusted odds ratio (AOR) = 1.00 (95% CI 0.90, 1.00)] or GAD [AOR = 1.03 (0.99, 1.07)] and visit adherence. Higher GAD was inversely associated with VLS [AOR: 0.90 (95% CI 0.81, 0.99]. Female gender [AOR = 1.67 (95% CI 1.05, 2.66)], higher quality of physical life [AOR 1.17 (95% CI 1.04, 1.32)] and living with parents [AOR = 1.61 (1.00, 2.57)] were significantly associated with VLS. **Conclusions**: Low levels of generalized and COVID-19 related anxiety were reported among Tanzanian AWH. Scaling up integrated screening and management of GAD into HIV care for AWH could improve VLS among this population.

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618. Sirili, N., Kiwango, G., Nyamle, N., *et al*... (2025). Weaknesses and strengths of the community health systems governing structures in Tanzania: A call for harmonization. *Journal of Community Systems for Health*, Vol. 2(1). Doi: 10.36368/jcsh. v2i1.1067.

Abstract

Background: Introduction: Strong community health governance structures (CHGS) are essential for effective community health systems. In Tanzania, several governance structures exist at the village level; however, limited linkages between different structures have resulted in coordination

challenges and fragmented efforts. We, therefore, conducted a study to explore stakeholders' perspectives on the strengths and weaknesses of CHGS to inform future harmonisation efforts. **Methods:** An exploratory qualitative case study design was conducted in December 2021 in two selected regions of Tanzania. A total of 42 in-depth interviews were carried out with key stakeholders involved in community health governance, including members of Council Health Management Teams (CHMTs), health facility in-charges, chairpersons of Health Facility Governing Committees (HFGCs), Village and Ward Health Committees, district health system coordinators, and local government officials. Data were analysed using thematic analysis. **Results:** Key weaknesses identified included a lack of operational boundaries between committees, overlapping membership, inadequate financial support for committee operations, and a poor understanding of operational guidelines. Conversely, the existence of a defined committee structure and specified standards for operation were identified as strengths. **Conclusion:** Tanzania's CHGS demonstrate several promising features; however, challenges such as overlapping memberships, unequal financial support, fragmented subcommittees, and inconsistent access to operational guidelines undermine their effectiveness. Addressing these gaps through harmonisation, equitable resource allocation, and targeted capacity-building is important to strengthen CHGS and enhance their responsiveness.

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619. Sirili, N., Temba, P., Yoram, F., *et al*… (2025). Is harmonization of curriculum enough to ensure clinical competencies of graduates? Experience of faculty and students from two health training institutions in Tanzania: a qualitative study. *BMJ open*, Vol. *15*(11)

Abstract

Objective: The growing complexity of global health issues underscores the need for a skilled workforce, achievable through competency-based training (competency-based curricula, CBC) that integrates knowledge and practice. Starting from 2022, medical and nursing CBC were harmonised across universities in Tanzania to ensure all graduates attain nationally defined core competencies. The reform aligned programme structure, learning outcomes and assessment methods to promote consistency and interprofessional collaboration. However, questions remain about whether harmonisation alone can ensure the development of practical clinical competencies among students. This study explored the experiences of medical and nursing faculty and students in implementing clinical training as a component of CBC in two health training institutions in Tanzania. **Design:** An exploratory qualitative case study was conducted with 67 participants, using 8 in-depth interviews with administrators and 8 focus group discussions with faculty and students. Data were analysed using Braun and Clarke's thematic approach. **Setting:** Two private, faith-based medical universities in the United Republic of Tanzania. **Participants:** The study purposefully recruited a total of 67 participants. The participants included university administrators (including Deputy Vice Chancellors for Academics, quality assurance officers and

deans), medical and nursing faculty and students (fourth-year medical and third-year nursing students). **Results:** Two main themes emerged: challenges in implementing clinical training and strategies used to enforce clinical training. Key challenges included curriculum design gaps, inadequate faculty and clinical instructors, a large number of students and a shortage of hospital staff. Strategies used were utilisation of clinical skills and simulation laboratories, involvement of non-academic clinical specialists' staff, use of student-centred learning methodologies and leveraging regional, district and specialised private hospitals for clinical teaching. **Conclusions:** Despite notable challenges in clinical training, the institutions in this study have implemented proactive strategies to support clinical training. Based on the findings, stakeholders should invest in increasing faculty and clinical instructors and expanding clinical placements to regional, district and private hospitals.

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620. Ski, C.F., Jennings, C.S., De Bacquer, D., *et al*… (2025). Anxiety and depression and secondary prevention of coronary heart disease in 14 countries across six WHO regions: the INTERASPIRE study. *European Journal of Preventive Cardiology*. Doi:10.1093/eurjpc/zwaf725.

Abstract

Aims Anxiety and depression are associated with poor outcomes in patients with coronary heart disease (CHD), however their association with achieving recommended cardiovascular prevention standards is unclear. We examined this association across all World Health Organization (WHO) regions**. Methods and results**: Cross-sectional analysis of the INTERASPIRE study of adults hospitalized in the preceding 6–24 months with incident or recurrent CHD who underwent a standardized interview and examination (2020–2023) across 14 countries. The main outcome was the INTERASPIRE-Guideline Target Score (GTS); a 10-point assessment of achieving secondary prevention lifestyle, risk factor, and therapeutic targets. A total of 4546 patients (21.1% women) with a mean (SD) age of 60.0 (10.3) were interviewed. Prevalence's of anxiety and/or depression were greater in women than men, and prevalence of CHD lifestyle and behavioral risk factors increased alongside severity of anxiety and depression symptoms. Compared to those without symptoms, adjusted odds ratios for achieving a suboptimal INTERASPIRE-GTS were: 1.52 (95% CI 1.13–2.04, $P = 0.006$) for symptoms of depression; 1.57 (95% CI 1.09–2.26, $P = 0.015$) for "possible" comorbid anxiety and depression; and 2.09 (95% CI 1.22–3.57, $P = 0.007$) for those with "probable" comorbid anxiety and depression. **Conclusion**: Increasing severity of depression and anxiety symptoms are associated with reduced potential for achieving guideline standards for CHD secondary prevention. Secondary prevention programs should integrate risk-stratified management of individuals with symptoms of anxiety and/or depression to improve CHD guideline targets. ***Keywords:*** *Women's Empowerment Gender Equality Urbanization Tanzania Social Change Qualitative Research.*

621. Slater, T.A., Kimeu, R., Jeilan, M., *et al*… (2025). Validation of a handheld electrocardiogram 6-lead recorder to obtain chest lead equivalents: An Africa Heart Rhythm Association study. Vol. 6(5). Doi: 10.1016/j.hroo.2025.03.009.

Abstract

Background: Handheld electrocardiograms (ECGs) can be used easily in remote centers at low cost and are therefore attractive options for rural, low-income settings. A modification to the Kardia 6L ECG has been developed to record chest leads V2 and V4 by placing the device electrodes in standard V2 and V4 position. **Objective:** The study sought to validate this novel technique against the 12-lead ECG in a multicenter cohort from Africa and the United Kingdom to determine whether recordings are adequate for clinical use. **Methods:** Adults >18 years of age who required an ECG as part of routine care were invited to participate. A 12-lead ECG was obtained followed by a 6-lead ECG using the Kardia 6L, then V2 and V4 chest lead equivalents were recorded. The primary endpoint was agreement between QT interval measurement in V2 and V4 on 12-lead ECG and Kardia 6L. Secondary endpoints assessed included rate, rhythm, PR interval, QRS duration, QRS amplitude, and ST-segment abnormalities. **Results:** A total of 1786 recordings were collected from 11 sites. Hypertension was the primary indication for ECG (28%). The coefficient of determination for QT interval in leads V2 and V4 was 0.59 and 0.61, respectively, within the prespecified limit of agreement. The adjusted R2 for multiple ECG parameters was >0.5, indicating satisfactory agreement. **Conclusion:** Modified chest lead recordings using the Kardia 6L handheld ECG recorder compared well with gold standard 12-lead ECG recordings and provide a basis for future simulated 12-lead ECG recordings using the Kardia 6L. This could improve accessibility of high-quality ECG recording and interpretation in rural, low-income settings. **Keywords:** Electrocardiogram ECG Handheld ECG, 6-lead ECG, Chest leads.

622. Smith, E.R., Muhihi, A., Wylie, B.J., *et al*… (2025). Multiple micronutrient supplementation for maternal anemia prevention (MMS-MAP): an individually randomized trial of higher-dose iron (60 mg, 45 mg) compared to low-dose iron (30 mg) in multiple micronutrient supplements in pregnancy. *Trials*, Vol. 26(1). Doi:10.1186/s13063-025-08906-7.

Abstract

Background: Antenatal multiple micronutrient supplementation (MMS) has been shown to be more effective than iron-folic acid (IFA) alone in reducing adverse pregnancy and birth outcomes. However, there is a concern that MMS containing 30 mg of iron may be less effective in reducing maternal anemia compared to IFA supplements containing 60 mg of iron. This poses a clinical and programmatic dilemma for countries with a high burden of maternal anemia (> 40% prevalence) where the World Health Organization (WHO) recommends using IFA with 60 mg of iron.

Methods/design: We will conduct an individually randomized, quadruple-blind superiority trial of daily antenatal MMS in Dar es Salaam, Tanzania (n = 6381 pregnant women). Participants will be randomized to receive a daily MMS regimen during pregnancy containing 60 mg iron, 45 mg iron, or 30 mg iron at a ratio of 1:1:1. The trial participants, outcome assessors (research staff and care providers), investigators, trial statistician, and data analysts will be blinded. Pregnant women will be enrolled in the trial before 20 weeks of gestation and will receive the randomized MMS regimen from enrollment until the time of pregnancy outcome/delivery. The primary outcome is maternal third-trimester moderate or severe anemia (Hb < 10.0 g/dL). The proportion of women who have moderate or severe anemia at 32 weeks of gestation will be compared between MMS containing 60 mg iron versus MMS containing 30 mg iron, as well as MMS containing 45 mg iron versus MMS containing 30 mg iron. Secondary outcomes include maternal hemoglobin concentration, anemia, maternal iron deficiency, and maternal iron deficiency anemia at 32 weeks gestation and 6 weeks postpartum; preeclampsia, antepartum bleeding, postpartum hemorrhage, maternal peripartum infection, pregnancy-related death, symptoms consistent with depression, fatigue, and maternal malaria during pregnancy and 42 days following; fetal death, stillbirth, birth weight, low birthweight, gestational age at birth, preterm birth, birthweight for gestational age, and small-for-gestational age birth; infant hemoglobin concentrations, infant iron status, neonatal death, and infant death at 6 weeks of age; and maternal side effects. Relative risks for binomial outcomes and mean differences for continuous outcomes and their 95% confidence intervals will be calculated for all the primary and secondary outcomes. **Discussion:** This study will produce causal evidence on whether MMS containing 60 or 45 mg of iron is superior to MMS containing 30 mg of iron in reducing maternal anemia and improving other important maternal and infant health outcomes. The findings of this study will inform Tanzania and similar contexts on the optimal formulation of MMS as many countries begin transitioning from IFA to MMS.

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623. Sobrero, F., Roccia, F., Pereira-Filho, V. A., *et al*… (2025). Multicenter retrospective study on plate osteosynthesis for non-condylar mandibular fractures in paediatric patients with deciduous, mixed, and permanent dentition: A World Oral Maxillofacial Trauma (WORMAT) project. *Journal of Cranio-Maxillofacial Surgery*, Vol. 53(5). Doi: 10.1016/j.jormas.2025.102607.

Abstract

Objective(s): Paediatric frontal fractures are uncommon injuries that may lead to significant complications. This study aimed to analyse patterns, surgical management, and outcomes of paediatric frontal sinus fractures in 14 maxillofacial centres worldwide. **Methods:** This multicentric retrospective study included patients ≤ 16 years of age operated for frontal fractures from January 2011 to December 2022. Collected data included: age, sex, cause of injury, site and type of fracture, surgical approach, nasofrontal outflow tract (NFOT) involvement, treatment, and outcome. Patients were divided based on the absence (group A) or presence (group B) of frontal sinus pneumatisation. Minimum follow-up was 6 months. **Results:** Thirty-two patients (mean age, 11.5 years) were included. Road traffic accidents were the main cause of injury (50%). In group A, 5/6 patients underwent open reduction and internal fixation (ORIF). In group B, 15 patients

reported an isolated anterior table fracture, fixated with ORIF in 88% of cases. Nine patients reported combined anterior + posterior table fractures, 67% managed with anterior table fixation and cranialisation. One patient had an isolated posterior table fracture and underwent cranialisation. NFOT involvement was statistically associated with combined fractures (67%) (p=0.028) and managed with obliteration in 8/9 cases. Residual contour deformities of the frontal convexity were the most frequent complication (19%). **Conclusion:** The surgical management varied by fracture site and sinus pneumatisation. Clinical outcomes were generally favourable, with residual contour deformities being the most common complications. Centers showed consistent approaches, but further multicenter studies are needed to establish definitive treatment strategies.

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624. Sobrero, F., Roccia, F., Pereira-Filho, V.A., *et al*... (2025). Multicenter retrospective study on plate osteosynthesis for non-condylar mandibular fractures in pediatric patients with deciduous, mixed, and permanent dentition: A World Oral Maxillofacial Trauma (WORMAT) project. *Journal of Cranio-Maxillofacial Surgery*, Vol. 53(5). Doi: 10.1016/j.jcms.2025.01.027.

Abstract

Background: Mandibular fractures are common maxillofacial injuries among children and adolescents, but treatment remains controversial. This study aimed to analyse the methods and outcomes of open reduction and internal fixation (ORIF) for non-condylar mandibular fractures in pediatric patients among 14 maxillofacial centres. Patients ≤16 years of age undergoing ORIF for non-condylar mandibular fractures between 2011 and 2022 were included. Age, gender, dentition stage, site and type of fracture, surgical approach, material, thickness, and number of plates, and outcome were recorded.179 patients (mean age, 11.1 years) reported 120 single and 59 double fractures, 79% involving at least one displaced or comminuted site. Single fractures were preferentially treated with rigid osteosynthesis in all dentition groups (64%), while double fractures with non-rigid osteosynthesis in mixed and permanent dentition patients (59% and 43%) and mixed osteosynthesis in deciduous dentition patients (50%). Mean follow-up was 21 months. Surgical site infection was the most common complication (8.9%), followed by minor malocclusion (1.7%) and osteitis (1.7%). **Conclusion:** the centers opted for fixation patterns like those recommended for adults, favoring non-rigid or mixed osteosynthesis for double fractures. The low complication rate shows ORIF is effective and safe for non-condylar mandibular fractures in pediatric patients.

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625. Sohal, K.S., Miranda, A.A., Agbor, A.M. (2025). Encephalitis: a rare neurological manifestation of mpox-a narrative review. *The Pan African Medical Journal*, Vol. 50(1). Doi: 10.11604/pamj.supp.2025.50.1.46671.

Abstract
The Monkeypox virus (MPXV) is a re-emerging global health threat, and since January 2022, it has been reported in 127 Member States across all 6 WHO regions. The recent epidemics have seen a difference in the usual presentation of the disease, ranging from asymptomatic and undetected cases to cases affecting numerous organ systems. Moreover, MPXV has been shown to cause severe neurological symptoms such as seizures and encephalitis. Therefore, this review article focuses on the evidence-based available literature on mpox infections, highlighting and summarizing encephalitis as a rare neurological manifestation of the disease that may otherwise be overlooked in general practice. ***Keywords:*** *Mpox encephalitis, neurological manifestations, mpox virus.*

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626. Somji, S., Sudfeld, C.R., Duggan, C., *et al*... (2025). Is rotavirus aetiology in young children with acute diarrhoea associated with sociodemographic and clinical factors, including rotavirus vaccination status? A secondary cross-sectional analysis of the ABCD trial. *BMJ Global Health*, Vol. *10*(7). Doi:10.1136/bmjgh-2024-018337.

Abstract
Introduction: One of the leading causes of global child mortality continues to be diarrhoea, where rotavirus contributes to about 24% of deaths among all diarrhoeal deaths, mostly in low- and middle-income countries. Rotavirus vaccination programmes have contributed to the reduction of mortality from 24% to 19% in rotavirus infections among hospitalised children, but the burden of rotaviral diarrhoea remains high, especially in settings with undernutrition. We aimed to determine the association of rotaviral diarrhoea aetiology with prior vaccination, socioeconomic status, and clinical factors in children to see their utility in clinical settings**. Methods:** We analysed secondary data from a multicentre clinical trial on antibiotic impact in children with diarrhoea and increased risk of mortality. We used stored stool samples of 6697 children aged 2–23 months old, presenting to a health facility with diarrhoea and increased risk of mortality. We determined rotavirus aetiology prevalence using quantitative PCR (qPCR) and looked at its association with the patient's rotaviral vaccination status, clinical symptoms and sociodemographic characteristics. Prevalence ratios (PR) were calculated with log-binomial regression models; if they did not converge, log-Poisson models were used. **Results:** Rotavirus prevalence of 21.1% was observed. There was a weak and statistically non-significant inverse association between rotavirus vaccination and rotaviral diarrhoea aetiology (adjusted PR: 0.71, 95% CI 0.49 to 1.03). Of the five tested clinical symptoms, shorter diarrhoea duration was associated with rotaviral aetiology (PR: 2.65; 95% CI: 1.29 to 5.45). Of the seven tested socioeconomic characteristics, only maternal and paternal secondary education compared with no formal education were associated with rotaviral aetiology (PR: 0.86; 95% CI: 0.74 to 1.00, PR: 0.87, 95% CI: 0.75 to 1.00, respectively)**. Conclusion:** Rotaviral diarrhoea aetiology cannot accurately be determined with prior receipt of rotavirus vaccination among children presenting to facilities with diarrhoea and increased risk of mortality. Short diarrhoea duration and parental secondary education were associated with increased prevalence of rotaviral aetiology; however, their utility in clinical care remains unclear

627. Spencer, S., Malowa, F., Mccarty, D., *et. al*… (2025). Causes and health outcomes of breathless patients admitted to hospital in Malawi: a multicentre prospective cohort study. *European Respiratory Journal*, Vol. 66(69). Doi: 10.1183/13993003.congress-2025.PA2440.

Abstract

Introduction: Breathlessness is a common cause of hospital admission globally and associated with high mortality, particularly in low-income countries. In Africa there is a paucity of data on the causes of breathlessness, where existing research has focused on individual diseases. Symptom-based research is needed to address the growing burden from multiple contributing conditions. **Aims:** The aims of this multicentre prospective study in Malawi were to evaluate causes of breathlessness and health outcomes. **Methods:** We consecutively recruited breathless adults (≥18 years) within 24-hours of hospitalisation. Patients were systematically screened using internationally accepted diagnostic criteria. We measured disease prevalence, survival and functional outcomes up to one-year post-admission. **Results:** Among 316 participants, one year outcome status was available for 97% (n=307); 51% (157/307) died within one year. The most common diagnoses were pneumonia (41%; n=131), anaemia (40%; n=126), heart failure (35%; n=112), and tuberculosis (29%; n=91). Two or more concurrent conditions were identified in 63% (n=199). Mortality was highest in patients with heart failure (69%; 75/109; 1y), anaemia (57%; 70/122), pneumonia (53%; 68/129) and tuberculosis (47%; 41/87), and was significantly worse when multiple conditions coexisted. **Conclusions:** Breathlessness is associated with high mortality in Malawi and two-thirds of breathless patients have more than one concurrent diagnosis. Health systems that focus on single diseases are likely to under-treat many breathless patients. We recommend integrated care interventions with symptom-based diagnostic and treatment strategies to improve outcomes.

628. Spencer, S.A., Yongolo, N.M., Simiyu, I.G., et *al*… (2025). The burden of multimorbidity-associated acute hospital admissions in Malawi and Tanzania: a prospective multicentre cohort study. *The Lancet Global Health*, Vol. 13(7). Doi:10.1016/s2214-109x (25)00113-5.

Abstract

Background: The global burden of multimorbidity—the coexistence of two or more long-term conditions—is increasing. Limited access to primary care in sub-Saharan Africa means acute hospital admission is often the sentinel multimorbidity presentation. This prospective multicentre cohort study aimed to describe the burden, constituent diseases, and outcomes of multimorbidity among patients acutely admitted to hospital in Malawi and Tanzania. **Methods:** Adults (ie, those aged ≥18 years) admitted to four hospitals (two tertiary and two district hospitals) with acute medical conditions were consecutively recruited within 24 h of presentation and followed up for 90 days. We estimated the prevalence of HIV infection, diabetes, hypertension, and chronic kidney disease using commercially available point-of-care tests, and captured self-reported and clinical diagnoses (n/N [%]). Health economic data were summarized by median and IQR and modelled using generalized linear models. All-cause 90-day mortality was summarized with Kalplan–Meier

plots and analysed using Cox regression models. **Findings:**1407 adults (657 [46·7%] were female and 750 [53·3%] were male; mean age was 52·3 years [SD 18·4]) were recruited. We examined multimorbidity prevalence in 1007 participants admitted to three hospitals that accept admissions directly from the community. Multimorbidity was found in 473 (47·0%) of 1007 participants and 292 (29·0%) had a single long-term condition. Outcomes at 90 days were determined for 1317 (93·6%) of 1407 participants. Adjusted 90-day mortality was higher in participants with multimorbidity (335 [41·7%] of 804; hazard ratio 1·5 [95% CI 1·1–2·1]) and those with one long-term condition (80 [28·3%] of 283; 1·5 [1·0–2·1]); compared with those with no long-term conditions (31 [13·5%] of 230). Health-related quality of life was lower in participants with multimorbidity compared with those with one long-term condition (median 0·402 [IQR –0·037 to 0·644] *vs* 0·557 [0·140 to 0·730]; p=0·005) at baseline, and at final observation (0·858 [0·667 to 1·00] *vs* 1·00 [0·589 to 1·00] respectively; p=0·01). In Tanzania, medical costs incurred by patients were higher in participants with multimorbidity compared with those with one long-term condition (relative effect 5·77 [95% CI 2·99–11·15]; p<0·0001).

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629. Srinivasan, T., Cherches, A., Seguya, A., *et al*… (2025). Essential equipment for baseline otolaryngology-head and neck surgery care: a global cross-sectional survey. *Laryngoscope investigative otolaryngology*, Vol. 10(1). Doi:10.1002/lio2.70078.

Abstract

Objective: Availability of surgical equipment and access to essential clinical services remains an important barrier to surgical care delivery, particularly in low- and middle-income countries (LMICs). This study aims to characterize the relative availability of essential equipment for otolaryngology-head and neck surgery (OHNS) care across World Bank income groups. **Methods:** We conducted a cross-sectional survey on otolaryngologists' perceptions on the availability of surgical equipment and ancillary services in their respective practice settings per a 5-point Likert scale ranging from never to always available. The study was disseminated online via professional societies, personal contacts, and social media. Eligible participants included otolaryngologists from 194 WHO-recognized countries, which were grouped by World Bank income group classification and WHO region. **Results:** The study involved 146 otolaryngologists, 69 (47%) from high-income countries (HICs), and 77 (53%) from LMICs. LMIC respondents were predominantly from the African and South-East Asian regions, which comprised 48% and 7.8% of all LMIC respondents, respectively. Results revealed significant differences in the availability of otologic, rhinologic, and endoscopic airway equipment between HICs and LMICs. Differences existed among commonly used equipment such as tympanomastoidectomy equipment and rigid bronchoscopy, to subspecialized equipment such as functional endoscopic sinus surgery equipment and cochlear implants ($p < 0.05$ each). **Conclusions:** The study highlighted key disparities in the availability of essential equipment for baseline OHNS care, especially for pediatric airway and otologic conditions. These results can be used to guide investment and advocacy efforts to improve specialty-specific surgical infrastructure relative to the global burden of OHNS diseases in low-resource settings.

630. Stephano, E.E., Rweyemamu, L.P., Yusheng., *et al*… (2025). HIV screening and associated factors among adolescent girls and young women in Tanzania: analysis of the 2022 demographic and health survey data. *BMC Public Health,* Vol. 25(3785). Doi:10.1186/s12889-025-24544-9.

Abstract

Background: Human immunodeficiency virus (HIV) infection remains a significant global challenge, particularly in resource-limited settings where access to healthcare services is constrained. Despite substantial efforts to combat HIV, the uptake of screening among adolescent girls and young women (AGYW) remains sub-optimal. This study aimed to determine the prevalence of HIV screening and identify the factors associated with screening uptake among AGYW in Tanzania. **Methods:** This was a cross-sectional analysis of the 2022 Tanzania Demographic and Health Survey (2022 TDHS). The study population included AGYW aged 15–24 years. The outcome variable was HIV screening. Modified Poisson regression analysis was used to identify factors associated with HIV screening among AGYW. **Results:** A total of 5,852 AGYW with a mean age of 19.3 ± 2.8 years were included in the analysis. The prevalence of ever "HIV screening" was 60.2% (95% CI: 58.4–61.9). Factors associated with a higher prevalence of HIV screening included older age 20–24 years (adjusted Prevalence Ratio, aPR 1.09, 95% CI 1.04–1.15), currently or previously in marital union (aPR 1.21, 95% CI 1.15–1.27), history of sexual intercourse (aPR 2.32, 95% CI 2.04–2.63), pregnancy history (aPR 1.43, 95% CI 1.35–1.52), awareness of sexually transmitted infections (aPR 1.16, 95% CI 1.10–1.22), awareness of HIV testing kits (aPR 1.08, 95% CI 1.03–1.13), condom use (aPR 1.07, 95% CI 1.02–1.12), ownership of telephone (aPR 1.14, 95% CI 1.09–1.19 for non-smartphone; aPR 1.25, 95% CI 1.13–1.37 for smartphone), and visiting a healthcare facility in the previous 12 months (aPR 1.18, 95% CI 1.13–1.24). Geographical differences showed that women in the Northern and Central zones (aPR 0.88, 95% CI 0.81–0.96) had a lower prevalence of HIV screening compared to those in the Eastern zone. **Conclusion:** The study revealed a sub-optimal prevalence of ever HIV screening among AGYW in Tanzania and was associated with different individual and interpersonal factors. Targeted interventions that address individual and interpersonal factors to improve HIV screening rates among AGYW should be implemented.

631. Straneo, M., Beňová, L., van den Akker, T., *et al*… (2025). Mixed vulnerabilities: the biological risk of high parity is aggravated by emergency referral in Benin, Malawi, Tanzania and Uganda. *International Journal for Equity in Health,* Vol. 24(19). Doi:10.1186/s12939-025-02379-5.

Abstract

Identification of interacting vulnerabilities is essential to reduce maternal and perinatal mortality in sub-Saharan Africa (SSA). High parity (≥ 5 previous births) is an underemphasized biological vulnerability linked to poverty and affecting a sizeable proportion of SSA births. Despite increased risk, high parity women rarely use hospitals for childbirth. We assessed whether emergency referral during childbirth was associated with adverse events in high parity women in hospitals in Benin, Malawi, Tanzania and Uganda. We used e-registry data collected in 16 hospitals included in

the Action Leveraging Evidence to Reduce perinatal morbidity and morTality (ALERT) trial. Main outcomes were severe maternal outcomes and in-facility peripartum death (fresh stillbirth or very early neonatal death). Main exposure was parity; emergency (in-labour) referral was included as effect modifier with potential confounders. We used multivariable logistic regression including parity/referral interaction and post-regression margins analysis. Among 80,663 births, 4,742 (5.9%) were to high parity women. One third reached hospital following emergency referral. Severe maternal outcomes and peripartum mortality were over 2.5-fold higher in high parity women with emergency referral compared to the lowest risk group. To avert these adverse events, emergency referral must be avoided by ensuring high parity women give birth in hospitals.

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632. Sumbizi, C., Obwar, A., Ismail, A., *et al*… (2025). Complex Roux-en-Y double hepaticojejunostomy following a sequelae of iatrogenic bile duct injury; case report. *International Journal of Surgery Case Reports*, Vol. 129.Doi.org/10.1016/j.ijscr.2025.111194.

Abstract

Introduction and importance: Obstructive jaundice following iatrogenic biliary injury is a rare but serious complication, often resulting from procedures such as laparoscopic cholecystectomy. It poses significant diagnostic and therapeutic challenges due to its complexity and potential for life-altering sequelae. Timely recognition and management are essential to prevent long-term morbidity. This report highlights the clinical course and successful surgical management of a complex biliary injury, underscoring the importance of advanced imaging, timing and prompt intervention. **Case presentation:** A 53-year-old woman presented with a one-month history of obstructive jaundice, progressive pruritus, pale stools, and dark urine. She denied pain or systemic symptoms. Her medical history included a laparoscopic cholecystectomy six months earlier, complicated by biliary peritonitis, which necessitated an exploratory laparotomy. Imaging revealed extensive biliary disruption, including absence of the common hepatic duct and a laceration of the left hepatic duct. Surgical reconstruction was performed using a Roux-en-Y hepaticojejunostomy. Postoperatively, the patient had an uneventful recovery, with significant clinical improvement and normalization of liver biochemistry. **Clinical discussion:** Iatrogenic biliary injuries, though uncommon, can result in significant morbidity. Early recognition through clinical suspicion and advanced imaging modalities is crucial for accurate diagnosis. Surgical intervention, particularly hepaticojejunostomy, remains the cornerstone of treatment for extensive biliary disruption, offering durable outcomes and resolution of symptoms. **Conclusion:** This case underscores the importance of vigilance in diagnosing and managing complex biliary injuries. Multidisciplinary collaboration, advanced imaging, and timely surgical repair are key to achieving favorable outcomes in such challenging cases.

633. Sumbizi, C., Obwar, A., Rofaeil, B., *et al*... (2025). Simultaneous endoscopic and laparoscopic management of acute biliary pancreatitis in the second trimester of pregnancy: A case report. *International Journal of Surgery Case Reports*, Vol. 133. Doi.org/10.1016/j.ijscr.2025.111589.

Abstract

Introduction and importance: Acute biliary pancreatitis during pregnancy is a rare but significant clinical challenge that requires a delicate balance between maternal and fetal safety. Gallstone disease remains among the leading causes of acute pancreatitis in pregnancy due to hormonal and physiological changes that predispose pregnant women to biliary stasis and sludge formation. While conservative management is often preferred in mild cases, persistent biliary obstruction or recurrent symptoms necessitate definitive intervention. ERCP and laparoscopic cholecystectomy have emerged as safe and effective modalities for managing gallstone-related complications during pregnancy**. Case presentation:** We present a case of a 30-year-old pregnant woman at 18 weeks of gestation who presented with acute-onset, progressively worsening epigastric pain radiating to the back associated with nausea and bilious vomiting but no fever. Laboratory investigations revealed elevated serum amylase and lipase, consistent with acute biliary pancreatitis, alongside obstructive biochemical features on liver function tests. Imaging confirmed multiple gallstones, choledocholithiasis, and a dilated common bile duct (CBD). She underwent successful ERCP with sphincterotomy and stone extraction, followed by laparoscopic cholecystectomy in the same session. The patient had an uneventful recovery and was discharged on postoperative day three without complications. **Clinical discussion:** The second trimester is considered the safest period for surgical intervention, given the lower risk of fetal loss compared to the first trimester and reduced risk of preterm labour relative to the third trimester. ERCP is the gold standard for managing choledocholithiasis in pregnancy, with fluoroscopy-minimizing techniques employed to mitigate fetal radiation exposure. Laparoscopic cholecystectomy has demonstrated superior outcomes in terms of reduced postoperative morbidity, shorter hospital stays, and faster recovery compared to open surgery. This case underscores the importance of a multidisciplinary approach, incorporating gastroenterology, surgery, and obstetric expertise, to optimize outcomes in pregnant patients with biliary pancreatitis. **Conclusion:** This case highlights the role of timely diagnosis and intervention in managing biliary pancreatitis during pregnancy. ERCP and laparoscopic cholecystectomy, when performed in the second trimester, provide a safe and effective treatment strategy, preventing recurrent disease and reducing maternal-fetal morbidity. As evidence supporting minimally invasive procedures in pregnancy continues to grow, standardized guidelines are needed to further refine management strategies and ensure optimal patient care.

634. Temanyika, S., August, F., Wangwe, P., *et al*… (2025). Incidence of Peripartum Cardiomyopathy and Maternal Outcomes: A Five-Year Review of Patients Treated at A Tertiary Teaching Hospital in Tanzania. *Tanzania Medical Journal*, Vol. 36(1). Doi.10.4314/ynt1d282.

Abstract

Background: Peripartum cardiomyopathy (PPCM) is a rare heart disease which affects previously health women toward the end of pregnancy or within five months following delivery. The incidence of PPCM shows wide regional variations and has been rising, probably due to increased risk factors and the incidence in Tanzania is unclear. The aim of this study was to determine the temporal trends in incidence and maternal outcomes among PPCM patients attended at the largest tertiary hospital in Tanzania -Muhimbili National Hospital. **Methods:** A descriptive retrospective case review study was done at Muhimbili National Hospital (MNH). A five-year review (July 2013-June 2018) of 129 case notes from the patients with PPCM was conducted. Trends of incidence of PPCM and maternal outcomes (maternal death, pulmonary edema, thromboembolism and stroke, cardiogenic shock and length of hospital stay) following PPCM were analysed. The Pearson's coefficient test was used to determine the temporal trends in incidence of Peripartum cardiomyopathy over the study period. P-value of less than 0.05 was considered statistically significant. **Result:** The overall incidence of Peripartum cardiomyopathy for five years was 3.0 per 1000 live births (1 in 333). There was observed increase in incidence rate from 1.4 in the first year to 4.8 in the fifth year of study which was statistically significant with P trend <0.0001. The most common complications observed in women with Peripartum cardiomyopathy in the overall cohort were pulmonary edema 31%, maternal death 7.8%, thromboembolism/stroke 4.7 %, and cardiogenic shock 4.7 %. The average hospital stay was 9 days. **Conclusion:** There was an overall increase in the incidence of Postpartum cardiomyopathy at Muhimbili National Hospital in the five years. The most common complications were pulmonary edema and maternal death. ***Keywords:*** *Incidence of peripartum cardiomyopathy, Maternal outcome..*

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635. Temu, S., Daniela, P., Athuman, A., *et al*... (2025). Bacterial Contamination in Neonatal Intensive Care Unit: A Potential Threat of Nosocomial Infections to Neonates. *East Africa Science*, Vol. *7*(1). Doi:10.24248/easci. v7i1.116.

Abstract

Background: Bacterial contamination in healthcare settings, especially neonatal intensive care units, plays a key role in the spread of nosocomial infections. However, there is limited data on the routine monitoring of contamination on surfaces and instruments in direct contact with neonates, as well as their antimicrobial susceptibility patterns in our setting. **Objective:** The study determined the level of bacterial contamination on instruments and surfaces frequently touched or in contact with neonates, and their antimicrobial susceptibility patterns. **Methods:** A cross-sectional study was conducted in the neonatal Intensive Care Unit (NICU) at St. Benedict Ndanda Referral Hospital (SBNRH) in Mtwara, Tanzania, over two days in November 2023. Swab samples were collected from surfaces and instruments that are frequently touched or in contact with neonates. Bacterial isolation, identification, and antimicrobial susceptibility testing were conducted according to the Clinical and Laboratory Standards Institute (CLSI) guidelines. Multidrug resistance (MDR) was defined as resistance to at least one antibiotic from three or more different classes. Data analysis was conducted using STATA software version 15, with descriptive statistics presented as frequencies and percentages. **Results:** Of 57 swab samples, 37 (64.9%) showed bacterial growth, yielding 43 isolates. The majority, 30(69.8%), were gram-negative

bacteria. The predominant isolates were coagulase-negative Staphylococci species, accounting for 8 (18.6%), followed by Escherichia coli and Klebsiella pneumoniae, each at 7 (16.3%). The most contaminated areas were nurse stations 2(100.0%), wall sanitizer dispenser 2(100.0%), weighing scale 1(100.0%), neonatal beds 16(88.9%) and door handles 6(85.7%). Enterobacter ales were highly resistant to cefotaxime 18(85.7%), ceftriaxone 17 (73.7%) and gentamicin 15(71.4%). Acinetobacter baumanii was resistant to piperacillin 5(100.0%), piperacillin-tazobactam 5(100.0%) and cefotaxime 5(100.0%). Pseudomonas aeruginosa were highly resistant to piperacillin 3(100.0%) and piperacillin-tazobactam 3(100.0%). Most of the gram-negative bacteria were susceptible to meropenem 25(83.3%). Staphylococcus aureus showed resistance to erythromycin 5(100.0%) and tetracycline 4(80.0%). Methicillin resistant Staphylococcus aureus (MRSA) was observed in 4(80.0%) isolated Staphylococcus aureus. Multi-drug resistance (MDR), extended-spectrum beta-lactamase (ESBL) production, and carbapenemase production were observed in 29 (82.9%), 3 (23.1%) and 5 (16.7%) respectively. **Conclusion:** The instruments and surfaces in the NICU were contaminated with high-risk pathogens, many of which showed significant resistance to commonly used antibiotics. These findings highlight the urgent need to strengthen infection prevention and control measures and antibiotic stewardship to reduce bacterial colonization and transmission to neonates.

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636. Temu, S.Z., Kilewo, C., Msuya, S.E., *et al*... (2025). Prevalence and factors associated with post-abortion contraceptive uptake at Mbagala Hospital, Temeke, Dar Es Salaam, Tanzania. *BMC Women's Health*, Vol.25(1). Doi:10.1186/s12905-025-03570-0.

Abstract

Background: The uptake of modern contraceptives post-abortion care bridges the gap of unmet need for modern contraceptives which can reduce the rate of unintended pregnancies and recurrent abortion, thus improving women's health. Studies have demonstrated variations in the uptake of modern contraceptives, even within the same country. **Objective:** To assess the factors associated with the uptake of modern contraceptive methods among women who received care at a comprehensive post-abortion care (cPAC) unit at Mbagala Hospital in Temeke, Dar es Salaam. **Methodology:** A cross-sectional analytical study involving 234 post-abortion women was conducted at Mbagala Hospital in Temeke, Dar es Salaam, from October 2020 to March 2021. The convenient sampling technique was employed to collect data using a pretested structured questionnaire. Subsequently, the data was cleaned and analyzed using SPSS Version 23. A Chi-square test with a significance level set at P-value < 0.2 was used to test associations, and multivariable analysis was employed to identify independent factors associated with the uptake of modern contraceptives, with a P-value of less than 0.05 being significant. **Results:** The uptake of modern contraceptives post-abortion was 67% among 234 post-abortion women, with the most commonly used method being injectable (35.9%). Higher uptake of modern contraceptives was observed in those aged 15 to 19 years with an Adjusted Odds Ratio (AOR) of 5.97 (95% CI 1.24–28.58), and in those aged 20 to 24 years, with an AOR of 3.55 (95%CI 1.54–8.18). Self-employed individuals also showed higher uptake with an AOR of 2.59 (95%CI 1.13–5.91). On the other hand, nulliparous and primiparous women were less likely to use modern contraceptives, with AORs of 0.12 (95%CI 0.02–0.60) and 0.22 (95% CI 0.16–1.70), respectively. **Conclusion and**

recommendation: All the women who attended the clinic for post-abortion care received counseling on contraceptive methods, and two-thirds of the women (67%) received modern contraceptives as part of post-abortion care. However, there was a missed opportunity to prevent unwanted pregnancies in 33% of the women who received care. Greater efforts should be made to reach out to women (aged 25 years or older), self-employed, and women with four or more children in order to increase the uptake rate.

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637. Thaver, S., Ebrahim, M., Noorani, M., *et al*... (2025). Diagnostic and Management Challenges of a Case of N-acetylglutamate Synthase Deficiency in a Resource-limited Healthcare Setting in Tanzania: A Case Report. *BMC pediatrics*, Vol. 26(86). Doi:10.1186/s12887-025-06449-z.

Abstract

Background: Inborn errors of metabolism represent a significant cause of childhood morbidity and mortality. These conditions are frequently missed in low-resource settings due to their anticipated rarity and similarity of symptoms to conditions such as sepsis. We present a case of a neonate with N-acetyl glutamate synthase deficiency whose diagnosis and management at our facility were complicated by limited healthcare resources. 1ARTICLE IN PRESSARTICLE IN PRESS CASE REPORT**.** A three-day-old male of South Asian origin born to consanguineous parents presented with lethargy, hypothermia and respiratory distress. He was initially managed for suspected septic shock. However, further investigations revealed severe hyperammonemia for which he was managed with peritoneal dialysis and oral sodium benzoate. His care was coordinated by a multidisciplinary team and included teleconsultation with a metabolic specialist. Once stabilized, he was transferred to our sister institution in Pakistan for further care where genetic analysis revealed a homozygous pathogenic variant (c.1306_1307insT; p.Thr439fs*52) in the N-acetyl glutamate synthase gene, confirming the diagnosis of N- acetyl glutamate synthase deficiency. However, the baby passed away at 49th day of life. C**onclusion:** High index of suspicion is important in diagnosing inborn errors of metabolism. Even in resource-limited setting, a multidisciplinary team with international partnership can optimize the care for patients with rare inborn errors of metabolism. There is also a need to increase awareness, improve diagnostic capacity and establish standardized treatment protocols for rare metabolic disorders in low-resource settings like Tanzania. ***Keywords:*** *N-acetyl glutamate synthase deficiency, Hyperammonemia, Neonate, Sepsis, Tanzania*

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638. Thomasi, M., Balowa, M.B., Zuhura, N., *et al*… (2025). Diagnostic Accuracy of Magnetic Resonance Cholangiopancreatography against Percutaneous Transhepatic Cholangiography among Patients with Obstructive Jaundice Treated at Muhimbili National Hospital. *Tanzania Medical Journal*, Vol. 36(4). Doi:10.4314/zaem4825.

Abstract

Background: Biliary obstruction carries high morbidity and mortality, often complicated by diagnostic challenges. While Magnetic Resonance Cholangiopancreatography (MRCP) offers a noninvasive method for detecting biliary strictures, its accuracy compared to the established

Percutaneous Transhepatic Cholangiopancreatography (PTC) remains underexplored in Tanzania. This study evaluates the diagnostic performance of MRCP against PTC among patients with obstructive jaundice at Muhimbili National Hospital (MNH), aiming to support evidence-based clinical decision-making. **Objective:** To determine the diagnostic accuracy of MRCP compared to PTC for detecting biliary strictures in patients with obstructive jaundice treated at MNH from July 2019 to December 2022. **Methodology:** This cross-sectional study was conducted at MNH from July 2019 to December 2022. Patients with obstructive jaundice who underwent both MRCP and PTC were selected using non-probability consecutive sampling. The study assessed the sensitivity, specificity, negative predictive value (NPV), positive predictive value (PPV), and overall accuracy of MRCP compared to PTC results. **Results:** In a study of 57 obstructive jaundice patients, MRCP demonstrated high performance in identifying ductal strictures, with sensitivities ranging from 70.0% to 98.1% and specificities between 89.4% and 100%, depending on the stricture site. PPV varied from 58.3% to 100%, while NPV ranged from 75.0% to 95.6%. The overall diagnostic accuracy for MRCP across all stricture types was notably high at 98.2%. **Conclusion:** In the current study, MRCP has demonstrated a high overall diagnostic accuracy in the detection of biliary strictures. Therefore, affirming the reliability and consistency of MRCP as a valuable non-invasive diagnostic tool for biliary strictures. **Recommendation:** Physicians should utilize a non-invasive MRCP technology to ensure accurate and timely diagnosis of biliary strictures.
Keywords: *Biliary strictures, Diagnostic accuracy, Magnetic Resonance Cholangiopancreatography (MRCP), Percutaneous Transhepatic Cholangiopancreatography (PTC)*

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639. Torgeirsen, K., Kamala, B., Mduma, E., *et al*… (2025). Frequency of team simulation and reduction in maternal deaths following Safer Births Bundle of Care implementation —a prospective observational study. *Advances in Simulation*, Vol. 10(1). Doi.org/10.1186/s41077-025-00387-7.

Abstract

Background: Safer Births Bundle of Care (SBBC) is a continuous quality improvement (CQI) program, implemented in 30 facilities in Tanzania, resulting in a 75% reduction in maternal deaths. Simulation training was introduced as a component of the CQI efforts, targeting individual and team skills, focusing on identified clinical needs. **Objective:** This study aimed to describe the frequency of documented simulation sessions and the number of recurrent participants and associations with changes in maternal death. **Methods:** SBBC was a stepped-wedge cluster randomised implementation study in 30 facilities in 5 regions of Tanzania from 2020 through 2023. The Sim Begin® facilitator training program was introduced to train facilitators and support implementation of a training cascade. Fifteen selected healthcare workers were trained in three levels of Sim Begin® to become facilitators (level 1) and mentors (level 2). Eight were trained to become instructors (level 3). In total, 90 local facilitators were trained to review local clinical data, run simulation sessions, and document in logbooks. Clinical data were collected from patient files by independent data collectors and looped back to the facilities on a weekly basis. Training interventions were planned, conducted, and evaluated based on identified gaps. Output measures were the frequency of simulation sessions, the number of recurring participants, and maternal

death within 7 days postpartum, the following month. **Results:** Overall, 281,165 parturient women were included in this study. The SBBC implementation period was 24–32 months, and 1280 simulation sessions were documented. Maternal deaths declined from 240/100,000 births in the baseline to 60/100,000 after the start of SBBC. There was an association between the frequency of simulation sessions and the reduction in maternal deaths (23% reduction per each unit increase on the log scale, P = 0.0018), and between the number of recurring participants and the reduction in maternal deaths (16% reduction per each unit increase on the log scale, P = 0.0006). **Conclusion:** This study documents a significant and clinically relevant association between the frequency of and participation in simulation sessions and the reduction of maternal deaths the following month.

640. Torgeirsen, K., Kamala, B., Mduma, E., *et. al*… (2025). Frequency of team simulation and reduction in maternal deaths following Safer Births Bundle of Care implementation-a prospective observational study. *Advances in Simulation*, Vol. 10(1).

ABstract

Background Safer Births Bundle of Care (SBBC) is a continuous quality improvement (CQI) program, implemented in 30 facilities in Tanzania, resulting in a 75% reduction in maternal deaths. Simulation training was introduced as a component of the CQI efforts, targeting individual and team skills, focusing on identified clinical needs. **Objective** The aim of this study was to describe the frequency of documented simulation sessions and the number of recurrent participants and associations with changes in maternal death. **Methods** SBBC was a stepped-wedge cluster randomised implementation study in 30 facilities in 5 regions of Tanzania from 2020 through 2023. The SimBegin® facilitator training program was introduced to train facilitators and support implementation of a training cascade. Fifteen selected healthcare workers were trained in three levels of Sim Begin® to become facilitators (level 1) and mentors (level 2). Eight were trained to become instructors (level 3). In total, 90 local facilitators were trained to review local clinical data, run simulation sessions, and document in logbooks. Clinical data were collected from patient files by independent data collectors and looped back to the facilities on a weekly basis. Training interventions were planned, conducted, and evaluated based on identified gaps. Output measures were the frequency of simulation sessions, the number of recurring participants, and maternal death within 7 days postpartum the following month. **Results** Overall, 281,165 parturient women were included in this study. The SBBC implementation period was 24–32 months, and 1280 simulation sessions were documented. Maternal deaths declined from 240/100,000 births in the baseline to 60/100,000 after the start of SBBC. There was an association between the frequency of simulation sessions and the reduction in maternal deaths (23% reduction per each unit increase on the log scale, P = 0.0018), and between the number of recurring participants and the reduction in maternal deaths (16% reduction per each unit increase on the log scale, P = 0.0006). **Conclusion** This study documents a significant and clinically relevant association between the frequency of and participation in simulation sessions and the reduction of maternal deaths the following month.

641. Torokaa, P.R., Joachim, A., Komba, A.Y., *et al*... (2025). Predictors of mortality and treatment failure in tuberculosis patients enrolled in the tuberculosis and leprosy

program in mainland Tanzania: a retrospective cohort study. *Bulletin of the National Research Centre*, Vol. 49(1). Doi:10.1186/s42269-025-01373-9.

Abstract

Background: Tuberculosis (TB) is a significant global health issue, mainly in developing countries. Despite the progress made in reducing TB rates, adverse treatment outcomes, such as deaths and treatment failures, continue to be a concern. We aimed to determine the treatment failure and death rates, and their predictors, among TB patients in Tanzania from January 2022 to December 2023. **Methodology:** We conducted a cohort study utilizing data from the National Tuberculosis and Leprosy Programme database, focusing on TB patients who began treatment in 2022 and 2023. The Cox proportional hazards model was used to conduct univariate and multivariate analyses. Hazard ratios and their respective 95% confidence intervals were reported. Kaplan–Meier curves were employed to estimate the probabilities of these outcomes over time. A p-value ≤ 0.05 was considered significant. **Results:** The overall death rate and treatment failure rate among participants were 2.76% and 0.11%, respectively. Older Adults had a significantly increased risk of adverse outcomes, with nearly four times the likelihood of death (AHR 3.62, 95%CI: 3.18–4.11, p < 0.001) and twice the likelihood of treatment failure (AHR 2.25, 95%CI: 1.12–4.52, p = 0.022). Male Participants faced a higher risk of both death (AHR 1.10, 95%CI: 1.03–1.17, p = 0.003) and treatment failure (AHR 1.56, 95%CI: 1.12–2.17, p = 0.009) than females. Urban residents had an increased risk of death (AHR 1.40, 95%CI: 1.32–1.49, p < 0.001) and treatment failure (AHR 1.46, 95%CI: 1.08–1.98, p = 0.014) compared to those in rural areas. Treatment in hospitals was associated with worse outcomes, including almost twice the risk of death (AHR 1.71, 95%CI: 1.57–1.86, p < 0.001) and a higher likelihood of treatment failure (AHR 1.49, 95%CI: 1.01–2.20, p = 0.042). Most deaths occurred within the first two months of treatment, whereas treatment failures peaked at six months. **Conclusion:** The study revealed significant differences in death and treatment failure rates based on patients' characteristics, with higher risks observed in older adults, males, urban residents, treatment at higher-level facilities, having pulmonary TB, TB/HIV co-infection, retreatment, being treated under Facility DOT, and being referred through other.

642. Torokaa, P.R., Joachim, A., Komba, D.E., *et al*... (2025). Mortality disparities among children and adolescents with tuberculosis in Tanzania Mainland from January 2023 to December 2023: A retrospective cohort study. *PLOS Global Public Health*, Vol. 5(10). Doi: 10.1371/journal.pgph.0005184.

Abstract

Every year, over 10 million people worldwide contract tuberculosis (TB). The 2024 World Health Organisation TB global report indicated that 32% of the total deaths were children and adolescents under 15 years old. The scale of TB highlights the urgent need for action to end the global epidemic by 2030. This study aims to evaluate the mortality rate, survival probabilities, and factors associated with mortality among children and adolescents with TB in Tanzania. A retrospective cohort study was conducted from the Tanzania National Tuberculosis and Leprosy Programme data, which included individuals under 15 years old who began TB treatment between 1st January

2023 and 31st December 2023. The last patient's end-of-follow-up time was on 16th June 2024. The primary outcome of interest in our study was death. We calculated overall and covariate-specific TB mortality rates per 1,000 person-months. The Kaplan-Meier curve was employed to estimate survival probabilities. A total of 10,491 children and adolescents receiving TB treatment were included, nearly half of whom, 5,940 (56.62%), were under age 5 years. A total of 177 (1.69%) died, resulting in a crude mortality rate of 2.86 per 1,000 person-months. Furthermore, TB and HIV co-infection individuals had five times the risk of death (aHR = 5.03, 95% CI = 3.40-7.47, $p < 0.001$) compared to non-HIV infection. Community referrals were associated with a lower risk of mortality (aHR = 0.54, 95% CI = 0.35-0.84, p = 0.006). We observed significantly lower survival probabilities for patients referred from CTC, with rates of 96.8%, 96.0%, and 95.8% at 2, 4, and 6 months, respectively, compared to those referred from the community, which showed higher survival probabilities of 99.5%, 99.3%, and 99.2% over the same periods. The findings reveal significant differences in TB mortality in relation to age, referral system, and co-infection. Integrating TB services with child healthcare programs and strengthening differentiated service delivery models can improve survival rates. Targeted interventions in high-risk areas are essential to reduce TB mortality.

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643. Torokaa, P.R., Njau, A., Kimambo, J., *et al*... (2025). Cholera outbreak in Hanang District, Manyara, Tanzania, July 2024: An unmatched case-control study. *J Interv Epidemiol Public Health*, Vol. *8*(2).

Abstract

Introduction: Cholera, a secretory diarrheal illness caused by Vibrio cholerae, is a significant public health threat in low-income countries, resulting in 1.3 to 4.0 million cases and 21,000 to 140,000 deaths annually. Persistent cholera outbreaks in the country necessitate investigation, Water Sanitation and Hygiene (WASH) improvements, and strengthened response interventions. This study **aimed** to describe the outbreak, determine its source and risk factors and institute control measures to guide effective prevention and containment strategies. **Methods:** We conducted a descriptive analysis of the cholera cases recorded in the line list. Data collection for the case-control study was done using Kobo Toolbox. The QGIS 3.26.3 was used to map the hotspot area. Categorical variables were summarized using frequency distributions, and binary logistic regression was applied to assess factors associated with cholera disease transmission. The measure of association was the Odds Ratio (OR) with corresponding 95% Confidence Intervals (CI). Statistical significance was set at a p value of <0.05. **Results:** We found an Attack Rate (AR) of (86/17146, 0.5%), and the majority of cholera cases were below 25 years 19/45 (42.2) than control 9/45 (20%). More than half of the cases (44/86, 51.2%) were female. A total of 79/86 (91.9%) cases were farmers. A total of 85/86 (98.8%) was residing in the Gisambalang ward, and 42/86 (48.8%) were from Gandi hamlet. The Case Fatality rate (CFR) was 3 (3.5%). We found that individuals below the age of 25 years had 4.05 times the odds of getting cholera (AOR 4.05, 95%CI: 1.45-11.26). Individuals who ate food outside their homes had 4.43 times the odds of getting cholera (AOR 4.43, 95%CI: 1.55- 12.63). **Conclusion:** Overall, the cholera outbreak in Hanang district, specifically in Gisambalang ward, affected farmers. Also, the case fatality rate was high, 3.5%. The age below 25 years and eating outside the home was significantly associated

with cholera transmission. We emphasize community education, personal hygiene and sanitation interventions.

644. Torokaa, P.R., Urio, L.J., Mwakalobo, A., *et al*… (2025). Evaluation of the Human Immunodeficiency Virus viral load surveillance system, national perspective in Tanzania: A descriptive cross-sectional study. *Journal of International Epidemiology and Public Health*, Vol. 8 (3). Doi:10.37432/jieph.2025.8.1.151.

Abstract

Introduction: Humanimmunodeficiency virus (HIV) infection is still a global public health problem. The number of HIV-positive individuals was estimated to be 38.0 million worldwide in 2020, with 2.78 million being children and adolescents aged 0 to 19 years. The evaluation findings will influence HIV care policy and resource allocation. We aimed to assess the usefulness and system attributes of the HIV Viral Load (HVL) surveillance system in Tanzania and determine whether it meets its objectives. **Methods:** This descriptive cross-sectional analysis was conducted to describe the attributes and usefulness of the HVL surveillance system. We extracted HVL data from January to December 2022. The system description, case definition, and eligibility criteria were obtained from the system guidelines. We used updated guidelines for evaluating public health surveillance systems from the Centre for Disease Control and Prevention (CDC) to evaluate system attributes. We observed the data entry to determine the simplicity and time spent entering data into the system. Turnaround time (TAT) was calculated from the sample collection to the result returned to the clients. **Results:** The HVL surveillance system is implemented by 90.6% (4314/4764) of facilities in the country. The overall national data completeness was 97.4%. The system's sensitivity was 84.4%, with a predictive value positive (PVP) of 52% and a national data accuracy of 97%. Of eight data clerks interviewed, 100% (8/8) said the system was simple to use. The observed time for data entry for one request was an average of two minutes and an average of three minutes by laboratory data clerks and CTC2 data clerks respectively. 14.9±9.1 and 13 (IQR: 9-17.4) days, respectively. **Conclusion:** The system's overall performance in achieving its goals was satisfactory. The system was representative, simple, flexible, and sensitive. Turnaround time was at a median of 13 (IQR: 9-17.4) days.

645. Tumaini, B., Calori, J., Ibenzi, E. (2025). Challenges in the diagnosis and care of tuberous sclerosis complex in resource-limited settings: a case report from Tanzania. *Case Reports in Neurology*, Vol. 17(1). Doi:10.1159/000546098.

Abstract

Introduction: Tuberous sclerosis complex (TSC) is a rare, multisystem genetic disorder caused by mutations in the TSC1 or TSC2 genes, resulting in dysregulation of the mTOR pathway. Clinical manifestations include epilepsy, cutaneous lesions, and hamartomas in various organs, presenting diagnostic challenges, especially in resource-limited settings. In low- and middle-income countries (LMICs), barriers such as lack of access to genetic testing, advanced imaging, and targeted therapies contribute to underdiagnosis and delayed care. **Case Presentation***:* We present a 22-year-old male from rural Tanzania with a 20-year history of intractable, treatment-refractory

epilepsy. He also exhibited cutaneous findings, including facial angiofibromas, ash-leaf macules, and a shagreen patch. Brain imaging revealed subependymal nodules, and renal imaging identified angiomyolipomas. Despite the absence of genetic testing, a clinical diagnosis of TSC was made. The patient's condition was further complicated by aspiration pneumonia. Management included anticonvulsant therapy, antibiotics, and supportive care. Multisystem evaluation revealed cystic lung disease and renal involvement, underscoring the need for comprehensive follow-up. This case highlights the diagnostic reliance on clinical expertise and basic imaging in resource-limited settings. **Conclusion:** This report emphasizes the importance of clinical recognition and multidisciplinary management of TSC in resource-constrained settings. Strengthening healthcare infrastructure, raising awareness, and fostering collaborations to enhance access to genetic testing and mTOR-targeted therapies are critical to improving outcomes for TSC patients in LMICs. The lessons from this case underscore the global relevance of addressing healthcare disparities in rare genetic disorders. **Keywords:** Epilepsy, Subependymal nodules, Neurocutaneous disorder, Angiofibromas, Ash-leaf spots, Shagreen patch, mTOR pathway.

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646. Tumaini, B., Kunjumu, I., Mnacho, M., *et al*... (2025). Intensive vital signs monitoring reduces 30-day mortality among stroke patients: A cohort study from Tanzania. *Plos one*, Vol. 20(7). Doi: 10.1371/journal.pone.0328710.

Abstract

Background: Stroke is a leading cause of mortality and disability worldwide, with disproportionate impacts in low- and middle-income countries due to limited healthcare resources. Monitoring vital signs during the acute phase of a stroke is critical for detecting complications. We aimed to assess the impact of intensive (6-hourly) versus usual practice (12-hourly) vital sign monitoring strategies on stroke outcomes at Mloganzila Hospital, Tanzania. **Methods:** We conducted a prospective cohort study of patients with first-ever stroke admitted to Mloganzila Hospital between October 2023 and March 2024. Participants were assigned to 6-hourly or 12-hourly vital signs monitoring for the first 72 hours, after which all received usual care. Monitoring frequency reflected routine clinical practice; no investigational treatments were introduced, and therapeutic decisions were unaffected by group allocation. The primary outcome was 30-day all-cause mortality; secondary outcomes included functional disability measured by the modified Rankin Scale. Ethical approval was obtained, and informed consent was secured. Data were analyzed using SPSS version 26 and Stata version 15. Survival was assessed using Kaplan-Meier analysis, and factors associated with 30-day mortality were identified using modified Poisson regression. **Results:** Of 306 participants (mean age: 59.6 ± 14.0 years; 53.6% male), 63.7% experienced a hemorrhagic stroke. There were no significant differences in stroke severity or functional disability at 72 hours between the groups. Intensive vital signs monitoring was associated with significantly lower 30-day mortality compared to usual monitoring (35.9% vs. 49.7%; $p = 0.015$). **Conclusion:** Frequent monitoring of vital signs during the acute phase of stroke may enhance clinical stability and improve patient outcomes. Our findings demonstrate a

significant reduction in 30-day mortality with intensive monitoring. These findings support the establishment of dedicated stroke units with structured monitoring protocols in resource-limited settings to strengthen stroke care systems and reduce preventable deaths.

647. Tuncel, G., Akan, G., Kalaycı, M., *et al...* (2025). Efficient Detection of West Nile Virus in Urine Specimens by a Novel In-House RT-qPCR Detection Kit. *Canadian Journal of Infectious Diseases and Medical Microbiology*, Vol. (*1*). Doi:10.1155/cjid/6513971.

Abstract

West Nile Virus (WNV) infection represents a major global public health challenge. Even though most of the patients are asymptomatic, some cases progress to critical condition which may be fatal. Diagnosis traditionally relies on serological methods, but their limitations, including cross-reactivity, highlight the need for alternative approaches. Here, we present the development and validation of a novel RT-qPCR assay for precise and rapid detection of WNV RNA in urine, emerging as a promising specimen due to its noninvasive collection and high viral load. The assay demonstrates high efficiency and sensitivity, with a detection limit comparable to commercially available kits. This study highlights the importance of in-house kit design as a diagnostic tool in regions affected by emerging tropical infections, such as WNV, exemplified Cyprus. It emphasizes the critical role of low-cost, early detection with high sensitivity and specificity in infection control and surveillance efforts.

648. Tungu, A.M., Msaki, E., Ruhighira, J.J., *et. al…* (2025). Persistent overhydration despite significant fluid reduction limits lung function improvement after a single haemodialysis session in CKD patients: A before and after study using BIA. *Clinics*, Vol. 80. Doi: 10.1016/j.clinsp.2025.100821.

Abstract

Background: Hemodialysis (HD) is frequently employed to remove excess fluids and potentially enhance lung function in patients with chronic kidney disease (CKD) by alleviating congestion. The authors utilized a combination of traditional Bioelectric Impedance Analysis (BIA) parameters and Bioelectric Impedance Vector Analysis (BIVA) to offer more detailed insights into hydration status before and after a single HD session, and correlated these findings with spirometry. **Methodology:** The authors conducted an observational before-and-after dialysis study of 45 clinically stable CKD patients attending routine dialysis care. They assessed fluid status and lung function before and after a four-hour dialysis session using a mulifrequency BIA deviceand a standard spirometer. **Results:** Most study participants (71 %, n = 32) were overhydrated before hemodialysis. The HD session significantly reduced mean Total Body Water (TBW) [$t(44) = -11$, $p < 0.001$], Extracellular Water (ECW) [$t(44) = -13$, $p < 0.001$], Intracellular Water (ICW) [$t(44) = -11$, $p < 0.001$], and Transcellular Water (TSW) [$t(44) = -9$, $p < 0.001$]. Despite these reductions, 66 % of participants (n = 21) remained overhydrated based on BIVA. Regarding lung function, 73 % of participants (n = 33) exhibited abnormal pre-hemodialysis spirometry patterns, with 20 % portraying obstructive, 38 % restrictive, and 16 % mixed patterns. Post-hemodialysis, no

significant changes were observed in spirometry parameters or their respective % predicted values and lung function patterns. Interestingly, a significant association was found between spirometry patterns and BIVA-determined hydration status both before and after 4 hours of hemodialysis ($\chi 2 = 20$, $p = 0.002$). **Conclusions:** The 4-hour dialysis session reduced fluid volumes but did not normalize hydration status for most CKD patients and did not improve lung function post-dialysis.

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649. Tungu, M., Sirili, N., Anaeli, A., *et al*... (2025). Community health systems and priority setting for elderly healthcare services in rural Tanzania: Experience from Nzega and Igunga districts. *Plos One*, Vol. 20(4). Doi: 10.1371/journal.pone.0321482.

Abstract

Introduction: In the 1990s, Tanzania adopted health sector reforms with the aim of engaging the local communities in priority setting and decision-making for effective and efficient use of resources. Community engagement aims to enhance community voice and efficiently allocate available resources according to the citizens' demands to achieve the targeted health outcomes. The Community Health Systems (CHS) aim to strengthen Primary Health Care (PHC) services by empowering all community actors close to and serving community members. This study explored the role of the CHS during the priority setting process in improving health services for the elderly in rural Tanzania. **Methods**: An exploratory case study design was employed to collect data using Key Informants Interviews (KIIs) in Nzega and Igunga districts. Purposeful sampling was used to select participants from the two districts. Twenty-four (12 from each district) interviews were conducted with community representative members of the Health Facility Governing Committee (HFGC), social welfare, Council Health Management Team (CHMT), District medical officers, Medical Officers in-charge (MOI), planning officers, and health system information focal person. All audio-recorded interviews were transcribed verbatim. The transcribed interviews were translated from Kiswahili to English. The data were analyzed using the content analysis approach. The transcribed data, field notes, and documents were reviewed and read to identify broad areas in which to form initial codes and codes. Similar codes with related concepts were grouped to form initial categories and categories. **Results:** The findings of this study demonstrated the importance of CHS in strengthening community participation in identifying the elderly who are in need in the community and have been involved in elderly matters during priority setting of the elderly health services through the health facility governing committee. This means that there was community participation in elderly matters, especially to help the elderly reach health facilities and during priority setting, positive and negative perceptions among community members about the elderly agenda during priority setting. In addition, the findings show that there is poor awareness among community members, including family members, who perceive that the government is responsible for providing health services to the elderly and not the community or family members. **Conclusion:** The findings of this study indicate the importance of community during the priority setting process, which plays a great role in identifying the elderly who are in need and the most needed health services for the elderly in their communities. Therefore, the Local government authority should fully involve CHWs in collaboration with all community actors to address elderly matters in rural areas and improve elderly healthcare services. The community members have to be

educated and raise awareness about elderly health matters through different platforms, such as during world elderly day, village meetings, and at the health facility level.

650. Tupa, F., Ruwaichi, T., Luoga, P., *et al*... (2025). Institutional management factors influencing compliance with National Cancer Treatment Guidelines for cervical cancer: a case study from Ocean Road Cancer Institute, Tanzania. *BMC Cancer*, Vol. *25*(1). Doi:10.1186/s12885-025-14702.

Abstract

Background: Globally, cervical cancer is the fourth most common cancer among women, with approximately 604,000 new cases and 342,000 deaths reported in 2020. Like many other countries, Tanzania adopted the National Cancer Treatment Guidelines (NCTGs) in 2020 to improve the quality of care and ensure patient safety. However, despite the adoption of these guidelines, cervical cancer care in many healthcare facilities remains unstandardized. **Objective:** This study aimed to explore the institutional management factors influencing compliance with the NCTGs for cervical cancer care at Ocean Road Cancer Institute (ORCI). A case study design using a process evaluation approach was employed to assess the role of institutional management in influencing guidelines adherence. The study was conducted at ORCI, where 20 healthcare providers were purposively selected for in-depth interviews based on their experience and depth of knowledge on the topic. All interviews were audio-recorded, transcribed, and translated from Swahili to English. Thematic analysis was conducted by coding and organizing the transcribed texts to identify emerging themes and sub-themes. **Results:** Findings revealed that key institutional management factors promoting compliance with the NCTGs at ORCI include the existence of a well-defined policy on guidelines utilization, a supportive working environment, and a well-established support system. Conversely, a significant barrier identified was the low healthcare provider-to-patient ratio and machine downtime. The study found that strong institutional management characterized by clear policies, a supportive work environment, and effective support systems facilitates adherence to the NCTGs at ORCI. Nonetheless, the shortage of healthcare personnel poses a major challenge. Therefore, it is essential for the Ministry of Health, in collaboration with ORCI management, to recruit additional oncologists, surgeons, and other critical healthcare professionals. Strengthening the provider-to-patient ratio is crucial for improving compliance with the NCTGs and ultimately enhancing the quality of cervical cancer care.

651. Twaha, A., Donatus, D., Said, K., *et. al*… (2025). High Prevalence of Sickle Cell Disease in Low-Endemic Areas: A Pilot Study in Chunya, Tanzania. *The East African Health Research Journal*, Vol. 9 (1). Doi:10.24248/eahrj. v9i1.835.

Abstract

Background: Tanzania has the fifth highest prevalence of Sickle Cell Disease (SCD) worldwide. Annually, 11,000 children are born with SCD, but only 10% survive to their fifth birthday. Limited screening has led to underestimation of the burden in regions such as the southern highlands. The epidemiology of SCD, just like other diseases, is affected by climate change through increasing

migration in search of arable land hence the shifts in the geographical prevalence of SCD from high prevalent areas to low prevalence areas. Early identification of SCD across all regions is therefore essential to improve survival, quality of life, mental health, reduce stigma, and alleviate the financial burden. **Study Objective:** The objective of the study was to assess the prevalence of SCD and SCT in Chunya district, Mbeya Region, Tanzania and to identify demographical factors associated with the risk of SCT among community members. **Methods:** A cross-sectional study on SCD was conducted in Chunya district, Mbeya Region, between 21st and 22nd February 2020. A total of 523 villagers were selected and screened for SCD and sickle cell trait (SCT) using rapid test (SICKLE SCAN (®). **Results:** The study revealed a notably high prevalence of SCD in southern highlands of Tanzania which highlighted the need for early screening and community-based awareness programs. The prevalence of SCD in the tested population was 1.91% and the prevalence of SCT was 8.41% of which the majority of the SCD patient were five years and below P= .02. Having a mother from Southern Zone was a protective factor (OR 0.2) against acquiring SCT while having a father from Northern Zone was a risk factor (OR 10), P value <.005. **Conclusion:** To reduce the burden of SCD, new strategies of screening should be developed to enable timely diagnosis and management of the disease.

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652. Ulrich, C.M., Ali, J., Anderson, E.E., *et al*... (2025). Advancing Doctoral and Postdoctoral International Bioethics Training Programs Supported by the D43 National Institutes of Health (NIH) Fogarty Mechanism. *Journal of Empirical Research on Human Research Ethics*. Doi:10.1177/15562646251342882.

Abstract

Advancing doctoral and postdoctoral international bioethics training in low-and-middle income countries (LMICs) is essential to address the emerging and reemerging healthcare needs of local populations. The COVID-19 pandemic underscored the need for sustenance of global collaboration and rapid adaptability in the future to further prioritize research frameworks to benefit LMICs. Thus, the purpose of the manuscript is to share the successes, challenges, and future considerations of building bioethics research capacity in seven federally funded training programs supported by the Fogarty International Center of the National Institutes of Health D43 mechanism. We advocate for continued investment in training programs recognizing that it requires committed time and effort, specialized funding opportunities, cultural sensitivity, and interdisciplinary faculty support both domestically and internationally. This investment supports cross-disciplinary collaboration, enhances the ethical conduct of research and recognizes the importance of context-sensitive research that generates evidence-based data for global solutions.

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653. Unadkat, M. B., Nkya, D., Mongella, S., *et al*… (2025). First Transcatheter Pulmonary Valve Replacement in Tanzania: Feasibility of Advanced Cardiac Interventions in Resource-Limited Settings. *Case Reports*, Vol. 30(32).

Abstract

Background: Transcatheter pulmonary valve implantation (TPVI) has emerged as a viable alternative to surgical pulmonary valve replacement for patients with congenital heart disease and

right ventricular outflow tract dysfunction. However, its adoption in low-resource settings has been limited. **Case Summary:** We report the first successful TPVI procedures in Tanzania. Case 1 involved a 16-year-old male with Noonan syndrome and prior homograft conduit for pulmonary atresia and ventricular septal defect. Case 2 was a 16-year-old female with repaired Tetralogy of Fallot who had undergone prior surgical valve replacement with a Trifecta valve. Both patients presented with severe right ventricular outflow tract dysfunction and underwent successful TPVI with a 20-mm Melody valve (Medtronic) without complications. Postprocedural imaging confirmed hemodynamic improvement and symptom relief. **Discussion:** These first-in-country cases demonstrate the feasibility of TPVI in resource-limited settings. Broader implementation will require cost-reduction strategies, industry collaboration, and provider training to overcome financial and technical barriers. **Take-home Message:** TPVI can be safely implemented in low- and middle-income countries through structured planning and partnerships.

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654. Unkels, R., Mkumbo, E., Kapologwe, N.A., *et al*… (2025). "Implementing a Policy is Something else". Governance of a Complex Health Information System and its Digitalization in Tanzania: A Qualitative Study. *SSM-Qualitative Research in Health*, Vol. 9(100695). Doi: 10.1016/j.ssmqr.2025.100695.

Abstract

Introduction: Health management information systems are crucial for a country's health service planning and monitoring. Research findings indicate however that data produced within this system is often of low quality or not used for decision-making in low-resource settings like Tanzania. Policymaking and -implementation towards efficient data processes and use take place in an environment challenged by limited availability of human and other resources, low levels of supervision and feedback on data quality despite national and international guidance. To better understand how this complexity affects system governance, it is crucial to analyse perceptions and practices of national policymakers and subnational healthcare managers responsible for policy implementation. We therefore aimed to understand how policymakers and health care managers perceive and practice governance of health management information data systems and processes including the introduction of digital technology in Tanzania. **Methods:** We conducted 16 interviews with policymakers and healthcare managers experienced in governance and use of health management information systems in two districts, two regions and at national level in Tanzania between October 2022 and January 2023. Reflexive thematic analysis grounded in constructivism was used. Themes were developed through reflexive sessions underpinned by complexity theory and Lipsky's theory of street-level bureaucracy. **Results:** Health management information system governance took place in a complex environment characterized by unpredictable funding and human capacity impairing policy agenda setting and its implementation. Policymakers at national level and healthcare managers at subnational level resorted to different power practices to ensure implementation of national policies and agendas. While policymakers mainly governed data processes using institutionalized means, e.g., international tools and guidance or formal communication platforms, healthcare managers governed implementation by making discrete, contextualized choices on managing relations with other actor groups through negotiation and connection. This led to transformed agendas in some cases but also allowed for

innovations to make policies work. **Conclusions:** A new perspective may be needed to understand how governance of routine health information, which is central to health system strengthening, is implemented in policy environments characterized by unpredictability, where governments strive for efficient data use. Drawing on the concept of complex adaptive systems, we propose expanding the definition of Health Management Information System governance to include not only process management but also the relationship management of interdependent actor groups, especially healthcare providers, the primary data collectors.

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655. Van Husen, M.J., Kaaya, S., Swai, P., *et al*... (2025). Empowerment among treatment-engaged individuals living with schizophrenia in Tanzania. *BMC Psychiatry*, Vol. 25(1). Doi:10.1016/S2215-0366(21)00234-0.

Abstract

Background: As low-resource settings move to address the treatment and social service gap for people living with schizophrenia (PLWS), person-centered and recovery-oriented interventions should monitor impacts on empowerment. This study explores empowerment and associated factors among PLWS in Tanzania. **Methods:** This study uses endline data from the Culturally Adapted Family Psychoeducation for Adults with Psychotic Disorders in Tanzania (KUPAA) pilot trial. Participants included 66 dyads of PLWS and caregivers recruited from two tertiary-level hospitals. The main outcome variable of interest was empowerment (Rogers 28-item Empowerment Scale), and the main exposure variable was Participation in Society (Domain 6 of the WHO Disability Assessment Schedule, WHODAS 2.0). Key psychosocial correlates of interest included hopefulness, general self-efficacy, internalized stigma, and family functioning. Bivariate and multivariable analyses were used to explore variable relationships. **Results:** There were 21 women and 40 men with a mean age of 32 years. Bivariate analyses revealed that greater participation in society ($p < 0.0003$) was correlated with greater empowerment, higher hopefulness ($p < 0.0001$), and higher self-efficacy ($p < 0.0001$). Lower empowerment was correlated with higher self-stigma ($p < 0.0001$) and worse family functioning ($p < .001$). Multivariable models indicated that more participation in society was associated with higher empowerment, but when hope, self-efficacy, internalized stigma, and/or family functioning were added to the models, those factors were more strongly correlated with empowerment than participation in society. **Conclusion:** Empowerment is increasingly being recognized as an important outcome of psychosocial interventions. Understanding empowerment and its possible effects on recovery-centered outcomes is important when thinking of future interventions for PLWS in low-resource settings. Future recovery-oriented interventions and research should both consider including empowerment measurement among PLWS and incorporate their lived experiences in psychosocial treatment programming.

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656. Vasco, J.L., Sangeda, R.Z., Mbilinyi, T., *et. al*… (2025). Utilisation Patterns of Cardiovascular Medicines Among Outpatients at a Tertiary Cardiac Institute in Tanzania (2017-2022). *MedRxiv*, Vol. 11. Doi:10.64898/2025.11.30.25341295.

Abstract

Background: Cardiovascular diseases are among the leading causes of morbidity and mortality worldwide. Routine quantification of cardiovascular medicine utilisation is essential for stewardship, formulary decision-making and procurement planning. **Objective:** To describe outpatient utilization of cardiovascular medicines at the Jakaya Kikwete Cardiac Institute (JKCI) using ATC/DDD methodology. **Methods:** This was a retrospective longitudinal analysis of outpatient prescriptions (2017/2018-2021/2022). Medicines were classified according to the ATC system and quantified as Defined Daily Doses (DDD) per 100 outpatient days. The analyses progressed hierarchically from ATC levels 1 to 5. DU metrics (DU50/DU90) were used to assess the concentration. Monthly utilisation was examined using Seasonal Trend decomposition using Loess (STL). Statistical analyses were performed using SPSS (version 26). **Results:** Across the study period, the cumulative utilisation of cardiovascular medicines totalled 360.55 DDD per 100 outpatient days. Annual intensity peaked in 2018/2019 (82.92 DDD per 100 outpatient-days), was the second-highest in 2020/2021 (82.39), and was lowest in 2017/2018 (55.68). At ATC level 5, amlodipine (C08CA01), candesartan (C09CA06) and clonidine (C02AC01) were the principal contributors. The DU50 segment comprised five molecules (amlodipine, candesartan, clonidine, furosemide, and atorvastatin), whereas DU90 ranked 18th, indicating concentrated utilisation within a small number of agents. The STL showed a gradual secular rise with no statistically significant month-specific seasonality. **Conclusion:** Outpatient cardiovascular medicine utilisation at JKCI was concentrated within a narrow set of anti-hypertensive agents, with a cumulative burden of 360.55 DDD per 100 outpatient-days and a fiscal-year peak in 2018/2019. Institutionalising routine outpatient DDD surveillance may support stewardship, rational prescribing, and more equitable access to high-impact cardiovascular medicines in Tanzania.

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657. Veronika, S., Christian, K., K. H., *et al*… (2025). Association Between Taenia Solium Infection and HIV/AIDS in Northern Tanzania: A Matched Cross Sectional-study. *Tanzania Medical Journal,* V. 5(111). Doi: 10.6084/m9.figshare.4320863.

Abstract

Background: The frequency of Taenia solium, a zoonotic helminth, is increasing in many countries of sub-Saharan Africa, where the prevalence of the human immunodeficiency virus (HIV) is also high. However, little is known about how these two infections interact. The aim of this study was to compare the proportion of HIV positive (+) and negative (−) individuals who are infected with Taenia solium (TSOL) and who present with clinical and neurological manifestations of cysticercosis (CC). **Methods:** In northern Tanzania, 170 HIV+ individuals and 170 HIV– controls matched for gender, age and village of origin were recruited. HIV staging and serological tests for TSOL antibodies (Ab) and antigen (Ag) were performed. Neurocysticercosis (NCC) was determined by computed tomography (CT) using standard diagnostic criteria. Neurological manifestations were confirmed by a standard neurological examination. In addition, demographic, clinical and neuroimaging data were collected. Further, CD4+ cell counts as well as information on highly active antiretroviral treatment (HAART) were noted. **Results:** No significant differences between HIV+ and HIV– individuals regarding the sero-prevalence of taeniosis-Ab (0.6% vs

1.2%), CC-Ab (2.4% vs 2.4%) and CC-Ag (0.6% vs 0.0%) were detected. A total of six NCC cases (3 HIV+ and 3 HIV–) were detected in the group of matched participants. Two individuals (1 HIV+ and 1 HIV–) presented with headaches as the main symptom for NCC, and four with asymptomatic NCC. Among the HIV+ group, TSOL was not associated with CD4+ cell counts, HAART duration or HIV stage. **Conclusions: This** study found lower prevalence of taeniosis, CC and NCC than had been reported in the region to date. This low level of infection may have resulted in an inability to find cross-sectional associations between HIV status and TSOL infection or NCC. Larger sample sizes will be required in future studies conducted in that area to conclude if HIV influences the way NCC manifests itself.

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658. Wadosa, D.D., Lupondo, V., Hussein, A., *et al*… (2025). Early Mortality Rate and Associated Risk Factor in Patients Undergoing *Primary* Total Hip Replacement at a Tertiary Hospital in Tanzania. *Advances in Orthopedics*, Vol. 1. Doi:10.1155/aort/4831975.

Abstract

Background: Hip joint replacement surgery or total hip arthroplasty (THA) is an effective procedure for elderly patients. It can improve their quality of life and functionality while reducing the direct costs associated with arthritis. With increased THA procedures being performed on patients of different ages, it is essential to identify factors that may affect mortality for better patient care. **Objective:** This study aimed to identify the early mortality rate and potential risk factors among patients undergoing primary total hip replacement (THR) at a tertiary hospital in Tanzania. **Methodology:** This was a retrospective cohort study conducted from January 2020 to December 2021, which involved patients who had undergone THR. **Result:** The study involved 183 participants, 53.6% of whom were male with a mean age of 55.9 ± 18.4 years. Early mortality (death before 3 months) was found to be 7%. Having hypertension and being seropositive for HIV were independent prognostic factors for survival. Hypertension was associated with an increased chance of death by 4.8 times. The likelihood of death was eleven times higher among participants who were HIV+. **Conclusion:** Hypertensive patients had an increased chance of death of five times higher than those with no hypertension. HIV+ patients had an increased chance of death, up to eleven times higher, with differences in disease profiles and HIV endemicity in our settings. This calls for a different approach to THR.

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659. Wambura, E., Jotham, S., Flavian, S, *et al*... (2025). East African Journal of Health and Science. *East African Journal of Health and Science*, Vol. *8*(1).

Abstract

Background: Hypospadias is an anatomical congenital abnormality characterized by an abnormal development of the urethra fold with a ventral malposition of the urethra opening. Tubularized Incised Plate Urethroplasty (TIPU) is among the repair techniques that are not short of complications. **Methodology:** This was a cross-sectional study with a prospective component

conducted in the Urology department from January 2023 to June 2023 with the aim to determine the short term outcomes of Tubularized Incised Plate Urethroplasty and associated factors among children with hypospadias at Bugando Medical Centre. Children at the age of 4 months to 15 years of age were included in the study after TIPU. STATA version 15.0 was used for analysis as per the objectives of the study. With the use of the Chi-square test, a P-value of < 0.05 was considered to be significant. **Results:** 90 patients were included in the study with a median age of 2.25 years, the age of patients were grouped into two groups, 2 years of age. After TIPU, patients were followed - up for 1 month. Glandular hypospadias was in 40 (44.44%) patients, coronal in 29 (32.22%), subcoronal in 15 (16.67%), distal penile in 4 (4.44%), and midshaft in 2 (2.22%) patients. While other factors did not show any association with the outcomes of interest, hypospadias sites were significantly associated with complications (P value = 0.029). **Conclusion**. TIPU is a simple and effective technique for hypospadias repair in children. This study has shown a significant association between interventional complications and site of malformation. With supplementary factors in question, the authors recommend other large multicenter studies to cover the facet of all practical attributes of different techniques currently in place.

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660. Wang, D., Aggrey, P. A., Shahab-Ferdows, S, *et al*... (2025). The Effects of Prenatal High-Dose Multiple Micronutrient *Supplementation* on B Vitamins in Human Milk: a Randomized Controlled Trial in Tanzania. *Current Developments in Nutrition*, Vol. *9*. Doi: 10.1016/j.cdnut.2025.106767.

Abstract

Objectives: Investigate the impact of household use of multiple micronutrient (MN)-fortified bouillon cubes (vitamins A, B9 and B12, iron, zinc, and iodine) vs. control bouillon cubes (iodine) on morbidity and inflammation among nonpregnant and nonlactating women 15-49 y (WRA) and children 2-5 y. Methods: 769 WRA and 670 children were randomized and followed for 9 mo. Household bouillon consumption, morbidity symptoms (e.g., diarrhea, dysentery, fever, vomiting, respiratory symptoms), medication use (e.g., antimalarials, antibiotics), and health care visits were ascertained at biweekly home visits. Anemia and MN status, inflammation (C-reactive protein, CRP, α-1-acid glycoprotein, AGP, and fecal calprotectin concentrations), and malaria (rapid diagnostic test, RDT) were assessed at two endline visits (intervention weeks 35 and 38). Longitudinal outcomes were assessed via negative binomial models. Endline continuous and dichotomous outcomes were assessed via repeated measures ANCOVA and modified Poisson regression, respectively. **Results:** Reported longitudinal prevalence of morbidity symptoms, medication usage and visits to health care providers was low (e.g., < 1% of days with symptoms), and there were no group-wise differences. At endline, neither CRP nor AGP differed between groups (P > 0.05). However, the prevalence of asymptomatic malaria antigenemia differed by intervention group among children, but not WRA. Children in the interven tion group were more likely to have a positive malaria RDT (19.1% wk35, 11.8% wk38) compared to children in the control group (11.9% wk35, 7.6% wk38) (P ¼ 0.036). This effect was modified by baseline anemia status (P ¼ 0.067), but not baseline iron or folate status. Children in the intervention group who were not anemic at baseline were 1.9 (95% CI 1.2, 3.1) times more likely to have malaria at endline compared to non-anemic children in the control group (P ¼ 0.008). **Conclusions:** In this

population, there was no overall impact of multiple MN-fortified bouillon cubes on morbidity symptoms (including fever) or systemic inflammation. However, the increase in asymptomatic malaria antigenemia is concerning and warrants further exploration.

661. Wangwe, P.J., Muccadam, S.S., Majigo, M.V. (2025). A cross-sectional study of meconium-stained amniotic fluid among women giving birth at a tertiary teaching hospital in Tanzania. A*frican Journal of Midwifery and Women's Health,* Vol. 19(3). Doi:10.12968/ajmw.2024.0017.

Abstract

Background/Aims: Meconium-stained amniotic fluid is associated with adverse perinatal outcomes, and occurs in approximately 7–22% of all live births. The aim of this study was to determine the proportion of births with infected meconium-stained amniotic fluid and explore associated bacteriological patterns and perinatal outcomes in a tertiary teaching hospital in Dar es Salaam, Tanzania. **Methods:** This cross-sectional study was conducted at Muhimbili National Hospital between August and December 2018 with women at ≥28 weeks' gestation about to give birth to a singleton baby with longitudinal lie and cephalic presentation. A sample of fluid was collected from each woman and transported for Gram staining at a university teaching microbiology laboratory. Univariate and bivariate analysis were used to calculate associations between variables and meconium-stained amniotic fluid. **Results:** In total, 222 (8.7%) women out of 2566 births had meconium-stained amniotic fluid, 155 of whom (69.8%) had infected meconium. Mixed bacterial morphology was found in 59 cases (38.1%). Newborns from infected meconium-stained amniotic fluid were more likely to be admitted to the neonatal intensive care unit (32.9% vs 7.5%, P<0.001), to be fresh stillbirth (15.5% vs 3.0%, P=0.008) and to have an Apgar score ≤7 at 5 minutes (38.7% vs 7.5%, P=0.001). **Conclusions:** There is an increased risk of neonatal morbidity and mortality among mothers diagnosed with meconium-stained amniotic fluid. Detecting bacteria in the fluid raises concerns related to bacterial inoculation during routine obstetric vaginal examinations. Assessing antimicrobial culture and sensitivity pattern is highly recommended in future studies to improve current antimicrobial protocols when caring for babies born to mothers with meconium-stained amniotic fluid. **Implications for practice:** Healthcare professionals supervising labour and birth should be aware of the risks of neonatal morbidity in cases of meconium-stained amniotic fluid. Parenteral broad-spectrum antibiotics should be given to mothers with this diagnosis before birth to reduce neonatal morbidity. Ensuring sterile vaginal examinations is important to reduce the chances of mixed bacterial inoculation.

662. Wanjohi, M.N., Asiki, G., Wilunda, C., *et al*… (2025). Ultra-Processed Food Consumption Is Associated with Poor Diet *Quality* and Nutrient Intake Among Adolescents in Urban Slums, Kenya. *Int J Public Health.* Doi: 10.3389/ijph.2024.1607891.

Abstract

Objectives: To assess the caloric contribution of ultra-processed foods (UPFs), factors associated with UPFs energy intake, and investigate the relationship between UPFs energy intake, diet quality, and nutrient intake among adolescents in urban slums, Kenya. **Methods:** A cross-sectional

household study amongst adolescents (10–19 years, N = 621) collected socio-demographic and dietary intake data. Global Diet Quality Score (GDQS), mean, and percentage total energy intake (%TEI) from UPFs; and nutrient intakes were computed. Regression analysis assessed the factors associated with UPFs energy intake, and the association between %TEI from UPFs and diet quality. **Results:** Mean daily energy intake was 1,604 kcal (±550), 25.2% from UPFs. Higher leisure screen time (≥2 h/day) [OR = 1.9 (1.2–3.1)] was associated with UPFs energy intake. Household wealth index (quintile five vs. one) [OR = 2.6 (1.3–6.0)] was associated with non-UPFs energy intake. UPFs (%TEI) were inversely associated with GDQS score (quartile four vs. one) [β = −2.9 (−3.4 to −2.1)]. Adolescents with higher %TEI from UPFs (quartile four) had the highest total energy, total fat, and saturated fat; and the lowest protein, fibre, iron, calcium, and zinc intake. **Conclusion:** UPFs contribute substantially to adolescents' energy intake and are linked to poor diet quality and nutrient intake. ***Keywords:*** *ultra-processed, overweight, obesity, double burden of malnutrition, urban, slum, diet-quality, Kenya.*

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663. Wiener, D., Seth, M. D., Mandara, C. I., *et al*… (2025). Varying Malaria Rapid Diagnostic Test Accuracy by Regional Transmission Level and Demographics in Tanzania. *The American Journal of Tropical Medicine and Hygien,* Vol. 114(2). Doi:10.4269/ajtmh.25-0460.

Abstract

Malaria remains a significant global health burden, with ∼263 million cases across 83 countries. It is essential to quickly and accurately detect cases to control the spread of the disease. Given the widespread use of malaria rapid diagnostic tests (mRDTs) for case management and surveillance, it is crucial to understand test reliability. Clarifying how mRDT results differ from real-time polymerase chain reaction (qPCR) test results, as well as the nature of additional variance by test manufacturer, will be useful for reducing measurement bias. After comparing three national standard mRDTs and a research mRDT with qPCR results from a 2021 cross-sectional study in Tanzania, differences were found in terms of age, sex, and regional malaria transmission rate. The research test underperformed overall, with poor sensitivity across transmission strata. After comparing the research mRDT to standard mRDTs, the odds ratios indicated that transmission intensity may affect mRDT agreement and diagnostic performance. These results offer pertinent information on test accuracy and decrease outcome misclassification for malaria prevalence.

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664. Williams, R.J., Swinehart, B.D., Abouneameh, S., *et al*… (2025). Antibody responses to gSG6-p1, AgSAP, and SAMSP1 following anopheline salivary exposure. *Parasites & Vectors,* Vol. 18(1). Doi: 10.1186/s13071-025-07072-8.

Abstract

Background: Current methods to determine exposure to malaria-infected mosquitoes via entomologic investigations are technically challenging and can be inaccurate in low transmission settings. Antibody responses to mosquito salivary antigens (MSA) such as gSG6-p1 have been used as biomarkers of exposure to Anopheles mosquito bites, while newer MSA that are specifically associated with Plasmodium infection show promise for malaria vector exposure.

Methods: This study investigates two novel Anopheles gambiae salivary antigens, AgSAP and SAMSP1, as potential biomarkers of malaria vector exposure. We evaluated the humoral response to gSG6-p1, SAMSP1, and AgSAP in a murine model and in malaria-exposed individuals with submicroscopic parasitemia across different malaria endemicity areas, seasons, and infection statuses in coastal Tanzania. We also analyzed antibody kinetics following direct skin feeding assays carried out using uninfected colony-reared An. gambiae. **Results:** GSG6-p1, AgSAP, and SAMSP1 levels were all higher in individuals with submicroscopic malaria compared with endemic controls, and there was increased reactivity for AgSAP and gSG6-p1 in the villages with higher malaria prevalence, though most of these findings were only borderline significant. Meanwhile, SAMSP1 was the only MSA that induced a significantly higher humoral response during the rainy season, perhaps due to greater sequence identity of this MSA across multiple Anopheles species. GSG6-p1, AgSAP, and SAMSP1 levels increased in mice at 8 weeks after weekly mosquito feedings. However, human gSG6-p1 and AgSAP levels were paradoxically lower 4 weeks after direct skin feeding assays. **Conclusions:** Mosquito salivary antigens associated with Plasmodium infection such as AgSAP and SAMSP1 show promise as biomarkers of malaria vector exposure. However, the dynamics of immunoglobulin (Ig)G response against AgSAP and SAMSP1 after mosquito bites require further study. ***Keywords:*** *Mosquito salivary antigen, SG6, AgSAP, SAMSP1, Vector exposure, Biomarker, Mosquito feeding, Malaria, Plasmodium falciparum, Anopheles.*

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665. Winfrida, K., Alphoncina, K., Alma, D., *et al*… (2025). Socioeconomic Characteristics and the Burden of Non-communicable Diseases: A Cross-sectional Analysis of Tanzanian Households, 2021.*Pan* African *Medical Journal*, Vol. 52 (127). Doi:10.11604/pamj.2025.52.127.47787.

Abstract

Introduction: Non-Communicable Diseases (NCDs) pose a serious global health challenge. The burden of NCDs affects individuals across various demographic categories. Socioeconomic status (SES) has long been recognized as a determinant of health outcomes. Previous research suggests a complex interplay between SES and NCDs, with disparities in prevalence and disease management observed across different socioeconomic strata. This study aims to further examine the association between NCDs and socioeconomic characteristics to inform evidence-based interventions that can effectively mitigate the burden of NCDs. **Methods:** this study was a secondary analysis of a cross-sectional dataset collected in 2021 by the Tanzanian National Institute for Medical Research (NIMR). The original study assessed willingness and ability to pay for medical insurance. The current study employed quantitative approaches. Logistic regression is used to assess the association between SES and NCDs, adjusting for potential confounders including age, gender, family size, health insurance status, and place of residence. A backward elimination approach was used to retain variables with $p < 0.2$ in the final model. Socioeconomic status was assessed using an asset index generated through principal component analysis. **Results:** a total of 3,566 households were analyzed, with a mean age of 38.04 (SD: 11.76), 53.7% of whom were male. The overall prevalence of NCDs was 12.9%. Households in lower SES quintiles had higher NCD prevalence than those in higher SES quintiles, although this association was not statistically significant after

adjustment. However, age, larger family size, and lack of health insurance remained statistically significant predictors of NCD prevalence. **Conclusion:** while a clear association was observed between lower SES and NCDs in the univariate analysis, this relationship lost statistical significance after adjusting for demographic and household characteristics. However, age, family size, and lack of health insurance remained significant predictors of NCD prevalence. ***Keywords:*** *Chronic diseases, socioeconomic status, cardiovascular health, health disparities, non-communicable diseases, health insurance.*

666. Wonkam, A., Esoh, K., Levine, R.M., *et al*… (2025). FLT1 and other candidate fetal haemoglobin modifying loci in sickle cell disease in African ancestries. *Nature communications,* Vol. 16(1). Doi:10.1038/s41467-025-57413-5.

Abstract

Known fetal haemoglobin (HbF)-modulating loci explain 10–24% variation of HbF level in Africans with Sickle Cell Disease (SCD), compared to 50% among Europeans. Here, we report fourteen candidate loci from a genome-wide association study (GWAS) of HbF level in patients with SCD from Cameroon, Tanzania, and the United States of America. We present results of cell-based experiments for *FLT1* candidate, demonstrating expression in early haematopoiesis and a possible involvement in hypoxia associated HbF induction. Our study employed genotyping arrays that capture a broad range of African and non-African genetic variation and replicated known loci (*BCL11A* and *HBS1L-MYB*). We estimated the heritability of HbF level in SCD at 94%, higher than estimated in unselected Europeans, and suggesting a robust capture of HbF-associated loci by these arrays. Our approach, which involved genotype imputation against six reference haplotype panels and association analysis with each of the panels, proved superior over selecting a best-performing panel, evidenced by a substantial proportion of panel-specific (up to 18%) and a low proportion of shared (28%) imputed variants across the panels.

667. Xu, M. J., Decker, H., Abreu, A., *et al*… (2025). Time to Measure: A Proposed Theoretical Model for Head and Neck Cancer Intervals of Care. *World Journal of Otorhinolaryngology-Head and Neck SurgerY.* Dio:10.1002/wjo2.70060.

Abstract

Head and neck cancer care delays are challenging, given the complexity of cancer care pathways, which leads to delays throughout the patient journey, from the symptom onset to treatment completion. Current models and literature addressing cancer care are limited by heterogeneous definitions of care intervals, a focus on specific aspects of the patient journey instead of the whole care continuum, and limited use of implementation science to target gaps in implementing evidence-based interventions. Here, we propose the Head and Neck Cancer Timely access TO Care Model as an approach to conceptualize, measure, and address delays in diverse health systems.

668. Yang, W.C., Arsenault, C., Fan, V.Y., *et al*… (2025). Antenatal corticosteroids for pregnant women at risk of preterm labour in low- and middle-income countries: utilisation and facility readiness. *Journal Glob Health*.Doi: 10.7189/jogh.15.04149.

Abstract

Background: Administering antenatal corticosteroids (ACS) to pregnant women at risk of imminent preterm labour improves newborn survival. However, ACS remains substantially underused in low- and middle-income countries (LMICs), where most preterm births occur globally. Providing ACS in inadequately equipped settings can be harmful. Health facilities must demonstrate readiness to ensure safe and effective ACS use. We aimed to assess ACS utilisation and facility readiness to administer ACS based on the World Health Organization (WHO) recommendations. **Methods:** We used data from Service Provision Assessments in nine LMICs. The primary outcome was ACS utilisation, which was defined as having ever provided ACS in a health facility. We assessed the availability of injectable corticosteroids (dexamethasone or betamethasone) and facility readiness to administer ACS appropriately. To measure readiness, we developed an overall readiness index based on 35 indicators, grouped into four categories based on WHO recommendations. The results were stratified by facility level. **Results:** Across eight countries with comparable sampling strategies, only a median of 10.7% (range = 6.7–35.2%) of facilities had provided ACS, one-fourth (median = 25.3%; range = 4.6–61.5%) had injectable corticosteroids available at the time of the survey. Significant gaps were observed between corticosteroid availability and ACS use. We found low overall readiness indices, ranging from 8.1% for Bangladesh to 32.9% for Senegal. Across four readiness categories, the readiness index was the lowest for criterion one (i.e. ability to assess gestational age accurately) (7.3%), followed by criterion two (i.e. ability to identify maternal infections) (24.8%), criterion four (i.e. ability to provide adequate preterm newborn care) (31.3%), and criterion three (i.e. ability to provide adequate childbirth care) (32.9%). **Conclusions:** We proposed a strategy for measuring facility readiness to implement one of the most effective interventions to improve neonatal survival. Countries should operationalise readiness measurement, improve facility readiness to provide ACS appropriately, and encourage ACS uptake in well-equipped facilities.

669. Yang, W.C., Arsenault, C., Fan, V.Y., *et al*… (2025). Factors affecting antenatal corticosteroid use in low- and middle-income countries: Facility characteristics, structural readiness, and past performance of CEmONC signal functions. *Plos one*. Doi: 10.1371/journal.pgph.0003989.

Abstract

Antenatal corticosteroids (ACS) utilization is disproportionately limited in low- and middle-income countries, where most global preterm newborns who could benefit from this intervention are born. Understanding the factors affecting ACS use is crucial for improving its uptake. This study aimed to investigate facility-level factors associated with ACS use in low-resource countries. We used data from ten Service Provision Assessment surveys across nine countries. We restricted the sample to facilities that provided delivery services. Our primary outcome was recent ACS use, defined as having administered ACS within the past three months before the survey. We conducted

mixed-effect log binomial regressions, with country as a fixed effect and sub-national regions as random intercepts, to explore the association between recent ACS use and facility characteristics, injectable corticosteroids and ultrasound availability, facility structural readiness, and past performance of nine Comprehensive Emergency Obstetric and Newborn Care (CEmONC) signal functions. A sensitivity analysis excluding the Afghanistan data was performed since the country adopted a different sampling strategy that mainly sampled urban facilities. This study included 6183 facilities from nine countries. Across eight countries with nationally representative data, only 22.7% (median, range 4.0% to 27.4%) of facilities that provided delivery services had used ACS recently, compared to 59.4% in the Afghanistan survey. Urban facilities had a 21% higher likelihood of recent ACS use (95% CI 6%–38%) than rural facilities. Corticosteroid availability was associated with a 14% higher likelihood of recent ACS use (95% CI 1%–29%). Facilities in the highest readiness tertile were more likely to have recent ACS use than those in the lowest (RR 1.91, 95% CI 1.58–2.30). Each CEmONC signal function, except assisted vaginal deliveries, was significantly associated with recent ACS use, with neonatal resuscitation having the largest effect (RR 2.62, 95% CI 1.93–3.55). In conclusion, facilities that had performed CEmONC services were more likely to administer ACS, highlighting the importance of provider knowledge, skills, and competence in managing obstetric and newborn emergencies for effective ACS provision.

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670. Zacharia, A., Kinabo, C., Omary, H., *et al*.… (2025). Snakebite incidence, knowledge, and practices among rural subsistence farmers in Pwani Region, Tanzania: a cross-sectional study. *BMJ Public Health*, Vol. 3(2)

Abstract

Introduction: Snakebite is considered an occupational disease, primarily affecting farmers, pastoralists, and other agricultural workers in poor rural communities. The WHO aims to reduce snakebite incidence by 50% by 2030. Given that snakebite is an ecological disease, understanding indigenous knowledge and practices is essential for effective intervention planning. This study aimed to determine the snakebite incidence rate and the knowledge and practices related to snakebite among subsistence farmers in Pwani Region, Tanzania. **Methods:** A cross-sectional study was conducted in two rural villages. Data were gathered using a pre-tested questionnaire and analyzed using SPSS (Version 23.0). Snakebite incidence was calculated. Knowledge and practice scores were computed, categorized, and analyzed using Chi-squared or Fisher's exact tests, with significance set at 0.05. **Results:** Out of 766 subsistence farmers, 723 (94.4%, 95% CI: 92.6% to 96.1%) reported encountering snakes, and 104 (136 per 1000) reported having experienced snakebite in their lifetime. Snakebite incidence rate was significantly higher among participants aged 50 years and above (163 per 1000), widows or widowers (293 per 1000), and those residing in Miteza Village (167 per 1000) ($p<0.05$). Most incidents occurred during the dry season (67.7%, 95% CI: 58.2% to 75.8%), in the evening (30.8%, 95% CI: 22.4% to 40.0%), and on farms (39.4%, 95% CI: 28.8% to 49.4%). The lower limb was the most affected part of the body (87.5%, 95 CI: 78.6% to 93.8%). The knowledge of snakebite risks, signs and symptoms, first aid and prevention were significantly higher among participants who stayed at the villages for over 10 years (6.2%) and residents of Ngorongo Mashariki Village (7.3%) ($p<0.05$). Poor preventive practice was notably higher among females (53.7%), divorced individuals (65.3%), those with secondary

education (67.7%), and residents of Ngorongo Mashariki (65.6%) (p<0.05). **Conclusion:** The findings indicate that snakebite is a common occupational hazard in the region, and the gaps in knowledge and preventive practices necessitate targeted intervention to improve snakebite management and prevention.

671. Zambeli-Ljepovic, A., Tungsanga, S., Ghimire, A., *et al*... (2025). Population-Level Evidence for Expanding Kidney Transplantation Programs Worldwide. *American Journal of Transplantation*, Vol. 25(1).

Abstract

Background: Impact of PM2.5 on Cardiovascular Disease, Dementia, and Stroke in Older Kidney Transplant Recipients, Malika Wilson, Gayathri Menon, Yiting Li, Byoungjun Kim, Dorry Segev, Mara McAdams DeMarco.NYU Langone Health, New York, NY. **Introduction:** Exposure to fine particulate matter (PM2.5) Pollution is associated with negative health outcomes, including dementia, cardiovascular disease (CVD), and stroke, due to increased levels of oxidative stress and inflammation among community-dwelling older adults. Older kidney transplant (KT) recipients are more susceptible to dementia and CVD due to life-long neurotoxic immunosuppressant use and comorbidity. Therefore, we quantified the association between PM2.5 and post-KT diagnosis of dementia, CVD, and stroke. We also posit potential racial differences in the aforementioned associations. **Methods:** We used USRDS/Medicare claims to identify 44,596 older (age?55) first KT recipients between 2003 and 2019, who were identified as non-Hispanic (NH) Black or NH White. We identified incident diagnoses of dementia, CVD, and stroke after KT using ICD-9/10 codes. Daily PM2.5 levels were aggregated, annualized, and matched to the recipient's residential ZIP code and year of KT. Aggregated PM2.5 levels were dichotomized based on the US EPA standard (> 9 μg/m3). Cause-specific hazard models were used to quantify the adjusted hazard ratio (aHR) of post-KT dementia, CVD, and stroke. We tested effect measures modified by race. **Results:** Amongst 44,596 older KT recipients, 62% lived in high PM2.5 neighborhoods. Overall, older recipients in high PM2.5 neighborhoods had a significantly higher likelihood of being diagnosed with dementia (aHR= 1.10; 95%CI: 1.01-1.19), CVD (aHR= 1.08; 95%CI: 1.03-1.13), and stroke (aHR= 1.19; 95%CI:1.11-1.27). There were no significant racial disparities in the diagnosis of dementia, CVD, and stroke comparing older Black KT recipients to older White KT recipients (all P < **0.05). Conclusion:** Residence in high PM2.5 neighborhoods was associated with an increased risk for the diagnosis of dementia, CVD, and stroke among older KT recipients; these effects were consistent across all racial groups. Interventions addressing fine particulate matter pollution may be beneficial in preserving cognitive and cardiovascular health among older KT recipients.

672. Zhang, Z., Abdeta, C., Chelly, M.S., et *al*… (2025). Measurement properties of the SUNRISE study parent questionnaire for assessing sleep and sleep-related family practices. *Sleep Health*, Vol. 11(5). Doi: 10.1016/j.sleh.2025.04.006.

Abstract

Background: Few questionnaires with established measurement properties can globally measure sleep in preschoolers and sleep-related practices. **Objective:** To examine (1) concurrent validity of the SUNRISE parent questionnaire against an accelerometer for measuring sleep in preschoolers and (2) test-retest reliability of the questionnaire for sleep and related family practices. **Methods:** Sleepwasmeasured using the questionnaire and Actigraph GTX3+ accelerometer using a decision-tree algorithm and the Sadeh algorithm in 1737 preschoolers (4.4 ± 0.6 years) from 30 countries. Concurrent validity was examined using correlation analysis (duration, timing, and quality), paired t test or the Wilcoxon signed-rank test, Bland-Altman plot (duration, timing), and analysis of sensitivity, specificity, and accuracy (variability). Test-retest variability was examined for sleep and family practice variables in a subsample of 163 participants (4.3 ± 0.6 years) from eight countries. **Results:** Questionnaire measures of sleep timing and duration were correlated with the accelerometer measures ($r = 0.43$-0.75; $p < .001$). Although statistically significant mean differences were observed between questionnaire and accelerometer measures of sleep timing and duration variables, the difference in nighttime sleep duration had a small effect size (−14 min/d; Cohen's $d = -0.2$). The questionnaire was less able to provide adequate measurement for sleep quality and variability. High levels of reliability were observed for sleep (ICC = 0.63-0.83; Kappa = 0.53-0.62) and family practice (ICC = 0.81-0.94; Kappa = 0.73-0.86) variables. **Conclusion:** The SUNRISE questionnaire appears reliable in assessing preschooler sleep characteristics and related family practices, particularly in disadvantaged settings. It could be used in global surveillance of nighttime sleep duration and in studies examining associations of sleep timing and duration with health indicators in preschoolers.

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673. Zhu, Y., He, C., Bachwenkizi, J., *et al*… (2025). Under-five mortality burden in low-and middle-income countries set to increase under future warming. *One Earth*, Vol. 8(9). Doi: 10.1016/j.oneear.2025.101424.

Abstract

The under-5 child mortality rate remains disproportionately high in low- and middle-income countries (LMICs). Children are particularly vulnerable to high temperatures, and climate change is expected to increase child mortality, yet few studies have investigated the relationship between ambient temperature and child mortality in LMICs. Here, using a sibling-matched case-control design, we examined the association between monthly ambient temperature and under-5 child mortality across 59 LMICs. We found that child mortality increased by 5.2%–10.3% under moderate to extreme temperature (32.0°C –34.9°C), compared to the reference temperature (25.0°C). Our estimates indicate high temperatures contributed to an estimated 5.7 deaths per 1,000 children in LMICs during 2000–2020. This number would increase by nearly 1.5, 2.9, and 3.2 times under the strict-, medium-, and high-emissions scenarios in 2090s, respectively. This study offers insight into the child mortality burden attributable to climate warming across historical and future periods in LMICs, emphasizing the vulnerabilities and inequalities of children in developing nations amid climate warming. Reducing child mortality is a key global health priority. Although under-5 deaths have declined remarkably, low- and middle-income countries (LMICs) now account for nearly 90% of these tragedies since 2000, driven by factors like preterm birth, infections, poverty, and environmental risks. Despite these risks, global-scale evidence on the

association between climate warming and child mortality in LMICs remains limited, and projections of future climate-related mortality burdens are sparse. This gap hinders the development of targeted interventions, leaving children in LMICs at greater risk of climate-related deaths. This study provides global evidence that heat exposure significantly increases child mortality in LMICs, and under a worst-case climate-warming scenario, heat-related under-5 mortality could triple in the 2090s. These findings could inform policymakers, health systems, and international agencies in designing adaptive strategies—such as heat-resilient healthcare infrastructure, early-warning systems for climate-sensitive diseases, and targeted poverty reduction—to safeguard children's health in vulnerable regions.

674. Zinga, L.N., Tarimo, Q.G., Mbelekwa, K., *et al*… (2025). Treatment Patterns and Outcomes of Patients with Human Epidermal Growth Factor Receptor 2–Positive Breast Cancer in Tanzania. *JCO Global Oncology,* Vol. 11. Doi:10.1200/go-24-0061.

Abstract

Purpose: Human epidermal growth factor receptor 2 (HER2)–positive breast cancer (HER2+BC) is linked to poorer outcomes. Trastuzumab is the standard treatment, but its high-cost limits access in resource-limited settings. This study evaluated the treatment patterns and survival outcomes of patients with HER2 BC in Tanzania. **Materials and Methods:** A retrospective hospital-based study was conducted between January 2018 and May 2021 at two prominent public tertiary hospitals in Tanzania. The primary outcome was the 5-year overall survival (OS) rate. Independent variables included demographics, clinical characteristics, and treatment patterns. Survival analysis was conducted using the Kaplan-Meier method. The log-rank test was used in univariate analysis, whereas multivariate Cox regression was used in multivariate analysis. **Results:** A total of 169 patients with nonmetastatic HER2+BC were included, with a median age of 50 years. Most patients were estrogen receptor–positive (50.3%) and diagnosed with stage III BC (58.6%). About 70.4% of patients received trastuzumab, whereas neoadjuvant chemotherapy was administered to 24.3%, and 95.9% underwent mastectomy. Trastuzumab was primarily used in the adjuvant setting rather than the neoadjuvant setting and was more accessible to patients with higher socioeconomic status. The 5-year OS was 65%, with a median survival of 72 months. Trastuzumab reduced the mortality risk by 74%. Extended therapy with trastuzumab benefited patients with hormone receptor–negative HER2+BC more than those who were hormone receptor–positive. Advanced-stage disease increased mortality risk, whereas postmenopausal status and nonsmoking were associated with lower mortality. A higher Eastern Cooperative Oncology Group score (>1) was associated with an increased mortality risk. **Conclusion:** Trastuzumab significantly improves OS in resource-limited settings, particularly in patients with hormone receptor–negative HER2+BC. There are disparities in access to trastuzumab in Tanzania.

675. Zubeir, Z., Nkrumbih, Z., Mpemba, G. (2025). A Rare Syndromic Coexistence: Bilateral Duplicated Collecting Systems with Bilateral Ureterovesical Junction Obstruction in a Child with Heterotaxy Syndrome and Polysplenia: A Case Report. *Medical Journal,* Vol. 7(4). Doi: 10.4103/dshmj.dshmj_51_25.

Abstract
The simultaneous occurrence of bilateral duplicated collecting systems and heterotaxy syndrome is extremely rare, with no previously reported cases from our setting to our knowledge. In this report, we present the case of a 2-year-old girl who experienced recurrent urinary tract infections, lower abdominal pain, and incontinence. An ultrasound revealed bilateral hydroureteronephrosis, and a contrast-enhanced computed tomography intravenous urography showed enlarged kidneys on both sides with duplicated collecting systems, moderate hydroureteronephrosis of the upper moiety, and dilated ureters due to stricture at the uretovasical junction. Additionally, the imaging revealed features consistent with heterotaxy syndrome (situs ambiguous) with polysplenia, including a right-sided stomach, hypoplastic pancreas, an elongated left liver lobe that extends laterally (beaver tail liver), a normal morphological variant of the liver, and azygous continuation of the inferior vena cava with absence of intrahepatic and intrahepatic segments. The heart and sigmoid colon were in their usual positions, with no associated cardiac abnormalities identified. The patient was referred to pediatric urology and nephrology for further evaluation. This case highlights the diagnostic value of cross-sectional imaging in identifying complex congenital anomalies and emphasizes the importance of a multidisciplinary approach in managing such rare presentations.

CHAPTER TWO
THESIS AND DISSERTATION

1. Abadi, G.M. (2025). Spectrum, Yield, And Predictors of Positive CT Brain Among Patients with Altered Mental Status Seen at the Emergency Department of a Tertiary Hospital in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Altered mental status contributes to 4% to 10% of emergency department cases globally. Altered mental status imposes a challenge to the emergency health care providers to identify its most likely cause, draw treatment plans, and direct patient disposition. Computed tomography (CT) scan of the brain is frequently used in the evaluation of patients with nontraumatic altered mental status, but it may be overused despite a reported low yield. However, there is a literature gap in Tanzania and across the developing world on the utility of CT brain among patients with nontraumatic altered mental status presenting to the emergency department. **Objective:** To determine the spectrum, yield, and predictors of positive CT brain among patients with nontraumatic altered mental status seen at the Emergency Department of a tertiary hospital in Tanzania between January 2021 to December 2024. **Material and Methods:** A cross-sectional study was conducted in May – August 2025 using medical records, radiological reports and CT brain image archives from 266 patients (9 pediatric and 257 adults) with nontraumatic altered mental status seen at the Emergency Medicine department of the Muhimbili National Hospital – Upanga and Mloganzila. A data extraction checklist was used for data collection of demographic characteristics, clinical profile, radiological CT brain findings, post CT brain interventions, and final diagnosis. Continuous and categorical data were analyzed using a T-test and Chi-square test respectively through a Stata version 13 whereby a P-value of ≤0.05 was considered statistically significant. Modified Poisson regression analysis was used to determine the predictors of positive CT brain findings. **Results:** A total of 266 nontraumatic altered mental status patients were recruited with CT brain yield of 169 (63.5%). The yield included both new and chronic abnormal CT brain findings. The CT brain spectrum being more of stroke related lesions and male sex was more likely associated with positive CT brain findings**.** Despite the high yield, only a third of patients underwent post CT brain interventions based on their findings. **Conclusion**: Our study revealed a high CT brain yield. Stroke related lesions were the leading findings and male sex was associated with positive CT findings.

2. Abbas, G. (2025). Prevalence and Clinical Characteristics of Inflammatory Bowel Diseases Among Patients Undergoing Colonoscopy at a Tertiary Healthcare Facility in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Backround: Inflammatory bowel diseases (IBD), including Crohn's disease (CD) and ulcerative colitis (UC), are chronic gastrointestinal disorders increasingly prevalent worldwide. Colonoscopy plays a pivotal role in the accurate diagnosis through direct visualization and biopsy sampling of affected gastrointestinal tissues. However, epidemiological and clinical data from developing

regions like Tanzania remain limited. **Objective:** This cross-sectional study aimed to investigate IBD's prevalence and clinical characteristics among patients undergoing colonoscopy at Muhimbili National Hospital (MNH) in Dar es Salaam, Tanzania. Key objectives include assessing the prevalence of IBD, detailing their clinical characteristics, and determining endoscopic findings of IBD based on comprehensive endoscopic and histologic assessments. **Methods:** A hospital-based cross-sectional study was conducted at a tertiary healthcare facility, MNH among patients undergoing colonoscopy from 19th September 2024 to 31st January 2025. Data were collected through a structured questionnaire. Colonoscopy and histopathological findings, performed by the hospital's gastrointestinal endoscopists and pathologists, respectively, were retrieved from the MNH health management system (Giva). Patients diagnosed with IBD were identified, and their demographic, clinical, and endoscopic characteristics were analysed using descriptive statistics with SPSS version 27. Prevalence of IBD was expressed as a proportion of patients with a histologically confirmed IBD diagnosis among all patients who underwent colonoscopy during the study period. The association between two categorical variables was tested on a contingency table using the Chi-square test or Fisher's Exact test and a p-value of <0.05 considered statistically significant. **Results:** A total of 202 participants were enrolled in this study, with the majority being male (54.0%). The prevalence of IBD among patients undergoing colonoscopy at a tertiary healthcare facility in Dar es Salaam, Tanzania was 8.4%. UC was the most common subtype, accounting for 70.6% of IBD cases, followed by indeterminate colitis (17.6%) and CD (11.8%). The majority of IBD patients were aged between 35–50 years, with a slight female predominance (F:M = 1.3:1). Most patients with IBD presented with a severe disease at diagnosis. Common clinical indications for colonoscopy among IBD patients included chronic diarrhea (88.2%), abdominal pain (88.2%), and hematochezia (70.6%). Three-fourths of UC (75%) involves the rectum with majority of case having an extensive colonic involvement (41.7%) while patients with indeterminate colitis are likely to have their disease located at ileocecal junction (66.7%). Ileocecal junction and extensive involvement were the two common colonic location for CD. **Conclusion:** IBD is a relatively prevalent among patients undergoing colonoscopy at a tertiary healthcare facility with a prevalence of 8.4%. UC is the most prevalent IBD phenotype (70.6%), followed by indeterminate colitis (17.6%) and CD (11.8%). It primarily affects young to middle-aged adults, with a slight female predominance. Most patients present with diarrhea (88.2%), abdominal pain (88.2%), and hematochezia (70.6%), often with a severe disease at diagnosis. ***Keywords:*** *Inflammatory bowel diseases, Crohn's disease, ulcerative colitis, epidemiology, colonoscopy, Tanzania, developing country*.

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3. Abdallah, A. K. (2025). Prevalence And Factors Associated with Psychiatric Readmission Among Psychiatric Patients at Kidongo Che Kundu Psychiatric Hospital, Unguja Zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Psychiatric readmission is a major concern worldwide, as it negatively impacts both patients and healthcare systems by leading to poorer clinical outcomes and higher healthcare costs. However, in Tanzania, data on the prevalence and determinants of psychiatric readmission, which is important for informing measures to improve psychiatric care, remain limited. **Objectives:** To

assess the prevalence and factors associated with psychiatric readmission among psychiatric patients admitted at Kidongo Chekundu psychiatric hospital, Unguja, Zanzibar. **Methodology:** A cross-sectional study was conducted among psychiatric patients 18 years and older at Kidongo Chekundu Psychiatric Hospital in Zanzibar, admitted between June and August 2024. Participants were selected using convenience sampling. Data was collected through interviewer-administered questionnaires, collected data was cleaned, processed, and analyzed using SPSS version 27.0. Bivariate and multivariate modified Poisson regression were used to identify independent predictors of psychiatric readmission. **Results:** A total of 311 patients (mean age = 36 years, females= 52.4%, schizophrenic = 32.5%) were enrolled. The overall readmission rate within three months was 58.5% (n = 182). The risk of three months' psychiatric readmission was higher among individuals aged 30-39 (adjusted risk ratio (ARR) = 1.465, 95% CI: 1.16–1.84), schizophrenic (ARR = 1.23, 95% CI: 1.00–1.50), those with history of physical abuse (ARR = 1.49, 95% CI: 1.16–2.22) and those prescribed with both oral and injectable medication (ARR = 1.46, 95% CI: 1.46.37–2.20). Individuals who were cared for by their children (ARR = 0.38, 95% CI: 0.16–0.89) had a significantly reduced risk of readmission. **Conclusion:** The findings in this study highlight the high rate of repeated hospitalizations among psychiatric patients, emphasizing the necessity for mental health practitioners to address demographic, social, and clinical factors through targeted interventions to mitigate high readmission rates and improve patient outcomes.

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4. Abdallah, S.S. (2025). Adherence and associated factors of preoperative fasting guideline among pediatric patients undergoing elective surgery at Mnazi Mmoja hospital in Zanzibar-Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Preoperative fasting aims to decrease the volume and acidity of gastric contents and lower the risk of pulmonary aspiration. Proposed guidelines advocate for a fasting duration of 2 hours for clear fluids, 4 hours for breast milk, and 6 hours for infant formula, nonhuman milk, and light meals. However, prolonged fasting in children results in clinical effects such as hypoglycemia, anxiety, electrolyte imbalance, hypovolemia, and dehydration. **Aim of the study:** This study aimed to assess adherence to preoperative fasting guidelines and associated factors among pediatric patients undergoing elective surgical procedures at Mnazi Mmoja Hospital in Zanzibar. **Methodology:** A hospital-based cross-sectional study was conducted at Mnazi Mmoja Hospital, Zanzibar, involving 95 ASA I and II elective surgery patients and 45 healthcare providers. A consecutive sampling technique was employed to recruit study participants from patients and healthcare personnel in the pediatric surgery department. Standard questionnaires were administered to assess adherence and associated factors. Data analysis was conducted utilizing SPSS V.27, and the variable and factor values were checked for associations through logistic regression. Statistical significance was established at a P-value of **Conclusion and recommendations:** Most of the children had prolonged fasting, which led to thirst, hypoglycemia, hunger, anxiety, and fever. Key factors contributing to non-adherence included delay in getting consumables, emergency surgeries, and surgical schedule changes. Proactively adopting and rigorously implementing the timely communication of any changes to the operation list and allowing "clear fluids up to 2 hours preoperatively" protocol is essential to improve adherence.

5. Adam, N (2025). Incidence and Timing of HIV Transmission Among HIV-Exposed Children and Their Associated Factors During the Postnatal Period in Manyara Region, Tanzania. Children and their associated factors during the postnatal period in the Manyara region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV transmission from mother to child (MTCT) remains a major global public health concern despite widespread implementation of prevention interventions, including maternal antiretroviral therapy (ART) and infant prophylaxis. In 2022, an estimated 130,000 new pediatric HIV infections occurred worldwide, the majority during the postnatal period. This ongoing postnatal transmission threatens the attainment of the global target to eliminate pediatric HIV by 2030. In Tanzania, limited data exist on the timing of HIV seroconversion and the underlying maternal and infant factors contributing to infection during breastfeeding. Understanding these determinants is essential for guiding interventions that strengthen the Prevention of Mother-to-Child Transmission (PMTCT) program. **Objective:** This study aimed to determine the incidence and timing of HIV seroconversion among HIV-exposed infants (HEI) and to identify maternal and infant-related factors associated with HIV transmission during the postnatal period in Manyara Region, Tanzania. **Methods:** A convergent parallel mixed-methods design was employed. The quantitative component used a retrospective cohort of 797 HIV-exposed infants and their mothers extracted from the national PMTCT Macro-3 database (2019–2023). Descriptive statistics summarized demographic and clinical characteristics. The incidence rate and median time to HIV infection were estimated using survival analysis. Kaplan–Meier curves and log-rank tests assessed differences in HIV-free survival, while Cox proportional hazards models identified predictors of transmission. The qualitative component applied a modified grounded theory approach, involving in-depth interviews with 26 mothers of HIV-exposed infants and 5 healthcare providers (HCPs) to explore contextual, behavioural, and structural factors influencing postnatal HIV transmission. NVivo 12 software supported data coding and thematic analysis. **Results:** Among the 797 HEI, 17 infants (2.1%) tested HIV-positive during follow-up, translating to an incidence rate of 1.92 per 1,000 person-months. The median time to infection was 10 months, with most infections occurring between 3 and 15 months. Significant predictors included high maternal viral load (aHR=14.32, $p<0.001$), mixed feeding (aHR=3.95, $p=0.034$), and male infant sex (aHR=7.46, $p=0.037$). Persistent HIV transmission in an infant was linked to stigma and non-disclosure, undermining adherence, traditional and economic influences on feeding, health system challenges, and peer and community support as enablers. **Conclusion:** Despite relatively low HIV incidence among HEI in Manyara, new infections persist due to entangled clinical, behavioural, and systemic challenges. Strengthening ART adherence support, promoting exclusive breastfeeding, enhancing community engagement, and improving health system efficiency are crucial to achieving the elimination of MTCT in Tanzania.

6. Agafina, F. (2025). Pattern of midfacefractures among patients with traumatic brain injuries at tertiary Hospitals in Dar es salaam Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The bones of the mid face are susceptible to fracture due to their location which is in close proximity to the cranium, and some make up its base. The impact on them can either cause midface fractures or be transmitted to the cranium, potentially leading to traumatic brain injuries (TBI). The association between TBI and midface fractures has been reported to be high, with prevalences ranging from 45.5%to 86%. Furthermore, the severity of TBI can raise suspicion about the type of midface fractures involved. Despite this observed association, there remains paucity of data on the patterns of midface fractures among patients with TBI and the relationship between them has not been firmly established. **Aim:** To determine the pattern of midface fractures among patients with TBI in tertiary hospitals in Dar es Salaam, Tanzania. **Materials and methods:** This was an analytical prospective cross-sectional hospital-based study which was carried out in two tertiary hospitals in Dar es Salaam, which are the Muhimbili National Hospital (MNH) and Muhimbili OrthopaedicInstitute (MOI). The study included all patients with TBI who presented and consented during the study period. The patients were interviewed, using a structured questionnaire followed by a thorough clinical examination and radiological assessment. Data analysis was done using SPSS version 27, where descriptive analysis was performed by comparing means of continuous variables and cross tabulation for categorical variables. The Chi square was used to determine statistical significance and $p<0.05$ was considered statistically significant. Logistics regression was used to determine the odds of occurrence of a specific type of midface fractures with a specific type of TBI. The results were reported as odds ratio and 95% confidence interval. **Results:** This study included one hundred and eighty-three patients (183) with TBI of which one hundred and twenty-four (124) hamidface fractures. The proportion of midface fractures among patients accounted for 67.8%. The patients ages ranged from 18 to 85 years old of which the majority of the patients were in the 30–40 years age group followed by the 20–30 years age group. Males were more (89.6%) affected than females with a male to female ratioof8.6:1. Road traffic accidents (RTA) were the most common aetiology of injury(n= 126, 68.9%),of which motor cycleaccidents were the most common, comprising of 86 patients (68.3%). Among the midfacefractures,the zygomatico-maxillary complex fractures were the most encountered(n=119,65%). Most patients had mild TBI(n=124, 67.8%),and contusions were commonly observed(n=52, 28.4%). There exist a significant association between the severity and types of TBI and the types of mid face fractures. Severe TBI were associated with Le Fort II, Le Fort III, ZMC, nasal, sphenoid, orbital blowoutand palatal fractures ($p<0.05$). The occurrence of most mid face fractures was significantly increased in the presence of intracranial hematoma. Le Fort II fractures had 3.8-fold odds, and palatal fractures had 7.8-fold odds of the occurrence of intracranial hematoma. Le Fort III, orbital blowout, nasal and sphenoid bone fractures were strongly associated with intracranial hematoma ($p <0.001$). **Conclusion:** There was a significant number of midfacefractures among patients with TBI,ofwhich zygomatico-maxillary complex fractures werethe most encountered type of midfacefracture.Road traffic accidents werethe leading aetiology of injury,with motorcycle accidentscommonlyinvolved. Most patients had mild TBI,and

contusions were commonly observed. There existsan association between the severity and types of TBIwiththetypes of midfacefractures. Given the high frequency of midface fractures in patients with TBI and their potential toexacerbate its severity, thesehighlight the need for their routine and comprehensive assessment aspart of standard trauma evaluation protocols.

7. Agness, G. (2025). Post-Urogenital Schistosomiasis Morbidities and Their Association with Health Literacy Among Reproductive Women at Misugwi District, Mwanza. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Urogenital schistosomiasis remains a major health concern for women of Reproductive age in sub-Saharan Africa. Poor health literacy around female genital schistosomiasis (FGS) may exacerbate symptom burden and hinder effective care-seeking. This study explored demographic, clinical, and behavioural factors associated with low FGS-related health literacy in a cross-sectional sample of women in endemic areas. **Methods:** A total of 291 women were surveyed in a cross-sectional study regarding history of urogenital schistosomiasis (US), health education exposure, proxy reproductive symptoms, and care seeking behaviours. Bivariate and multivariable logistic regression models estimated crude and adjusted odds ratios (COR, AOR) for poor health literacy. **Results:** The history of the US was significantly associated with poor health literacy (AOR 1.84; 95% CI 1.59–2.13; $p < 0.001$). Reporting more than one morbidity for reproductive comorbidity further increased odds (AOR 3.60; 95% CI 2.20–4.60; $p < 0.001$). Women who sought care from traditional healers also had higher odds of low literacy (AOR 1.34; 95% CI 1.03–1.45; $p = 0.005$), whereas attending formal health facilities served as the reference. Self-reported FGS health education, age, marital status, education level, and employment were not independently associated with literacy levels. **Conclusions:** This study highlights a high prevalence of post urogenital schistosomiasis morbidities among woman in Misugwi who experienced complications like pelvic pain, infertility and haematuria Women with prior urogenital schistosomiasis and those experiencing multiple FGS related symptoms face substantial information gaps. Reliance on traditional healers underscores the need to engage these providers in literacy interventions. Standard FGS education programs may require content and delivery enhancements to effectively reach high-risk groups. Longitudinal and interventional research should assess whether tailored literacy campaigns can reduce symptom severity and improve care pathways

8. Ajuaye, G.P. (2025). Clinicopathological features and outcome of primary bone cancer in adults treated at Ocean Road Cancer Institute and Muhimbili National Hospital, Tanzania, from January 2017 to December 2022. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Globally, primary bone cancers account for less than 1% of all malignancies. The annual incidence in the United States is approximately 0.9 per 100,000 people, while in Nigeria and Tanzania, they represent about 0.53% and 1.2% of all cancers, respectively. Despite their

rarity, the overall five-year survival rate remains around 67.9%. A multimodal approach, including perioperative chemotherapy and surgery, is the standard of care, with radiotherapy reserved for inoperable tumours or positive margins. **Objective:** This study aimed to determine the clinicopathological features, treatment modalities, socioeconomic characteristics, and predictors of overall survival in patients with primary bone cancer at Ocean Road Cancer Institute (ORCI) and Muhimbili National Hospital (MNH) in Tanzania. **Methods:** A retrospective, hospital-based cohort study was conducted on patients aged ≥18 years treated for primary bone cancer between January 2017 and December 2022 at ORCI and MNH. The dependent variable was two-year overall survival (OS). Independent variables included sociodemographic factors, histology, and treatment methods. Data were analysed using SPSS version 27. Continuous variables were described using means and standard deviations, while categorical variables were summarized with frequencies and percentages. Survival curves were generated using the Kaplan-Meier method, and predictors were identified through univariate log-rank tests and multivariate Cox regression models. A p-value of **Results:** Among 140 enrolled patients, 60.7% were male. The mean age was 30.38 ± 14.23 years. Osteosarcoma was the most common histologic subtype (70.7%), followed by chondrosarcoma (20%) and Ewing sarcoma (9.3%). The lower limb was the most frequently affected site (42.9%). At diagnosis, 51.4% of patients presented with stage IV disease, with the lungs being the most common site of metastasis (40%). Surgery was performed on 74.3% of patients, primarily wide local excision (53.8%) or amputation (38.5%). The overall 2-year OS was 32.8%, with significant variation by histologic subtype (chondrosarcoma: 50%, Ewing sarcoma: 30.8%, osteosarcoma: 28.3%; p=0.042) and metastasis status (localized disease: 52% vs. metastatic disease: 10.7%; p=0.002). Multivariate analysis identified metastatic disease at presentation, larger tumour size, higher histological grade, advanced T-stage, anatomical site, and lack of adjuvant chemotherapy as independent predictors of poorer survival. **Conclusion:** Osteosarcoma is the predominant subtype of primary bone cancer in Tanzania. The overall 2-year survival rate remains low at 32.8%. Key prognostic factors influencing survival include metastasis at diagnosis, tumour grade and stage, and access to adjuvant chemotherapy. These findings underscore the need for early detection and comprehensive, multimodal treatment to improve patient outcomes.

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9. Akaro, L. S. (2025). Exploring female sex workers' experiences of violence and aggression from their clients in Temeke, Dar es Salaam, Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Female sex workers (FSWs) globally face high levels of violence, with male clients as primary perpetrators. This violence is a widespread human rights violation and public health issue. From 2000 to 2018, about one-third of women worldwide experienced physical or sexual violence, often with lasting health impacts. Objective: To explore the experiences of violence and aggression among FSWs in Temeke, Dar es Salaam, Tanzania. **Methodology:** This qualitative phenomenological study used snowball sampling to recruit participants. Data were collected through in-depth interviews guided by a structured interview guide. The interviews were transcribed verbatim and analyzed using thematic analysis **Findings:** The study revealed that

FSWs experience various forms of violence, including physical and sexual assaults, as well as economic exploitation. Furthermore, multiple factors contribute to the violence and aggression faced by FSWs, including individual, socio-cultural, and economic influences. Individual factors encompass psychological harm, the age of the sex worker, education level, and mobility. In addition to these, socio-cultural factors such as family dynamics and the working environment also play a significant role. Economic hardship often forces women to accept dangerous clients and unsafe conditions, while substance use serves both as a coping mechanism and a risk factor, further increasing their vulnerability to violence. **Conclusion:** Despite facing significant risks of violence and aggression, female sex workers (FSWs) show remarkable resilience by using protective strategies like peer support, client screening, requiring pre-service payment, and avoiding unauthorized recordings. However, their ability to safeguard themselves is often limited by systemic obstacles embedded in laws, policies, and social institutions—such as the criminalization of sex work, lack of legal protections, limited economic opportunities, and widespread social stigma. For policymakers, legal advocates, and social service providers, this underscores the urgent need for comprehensive legal reforms, targeted economic empowerment programs, and enhanced social protection measures. By addressing these structural barriers, stakeholders can significantly improve the safety, health, and well-being of FSWs, enabling them to better exercise their rights and reduce their vulnerability to violence and exploitation.

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10. Alananga, R. (2025). Evaluating the implementation of quality assurance training guidelines by trainers for small-scale food processors: a case study at the Tanzania bureau of standards (TBS). Muhimbili University of Health and Allied Sciences.

Abstract

Background: Non-adherence to training guidelines is a widespread issue in low- and middle-income countries where weak regulatory systems and resource constraints hinder effective implementation. In Tanzania, small-scale food processors (SMEs) struggle to meet safety standards, with low certification rates despite training efforts led by the Tanzania Bureau of Standards (TBS). While existing studies mainly focus on SME compliance outcomes, little is known about how trainers the frontline implementers; interpret and apply Quality Assurance (QA)training guidelines in practice. Evaluating trainer implementation is critical because their methods, engagement strategies, and institutional support directly influence whether SMEs can adopt and sustain compliance with QA training guidelines. **Objective:** This study aimed to evaluate how trainers at the Tanzania Bureau of Standards implement QA training guidelines for small-scale food processors, focusing on trainers' understanding, teaching methods, trainee engagement practices, and implementation experiences. **Materials and Methods:** A qualitative case study design was employed, involving in-depth interviews, direct observations, and document reviews with TBS trainers across headquarters and zonal offices. Data were analyzed thematically using the Consolidated Framework for Implementation Research (CFIR), which provided a structured lens to examine trainer characteristics, teaching processes, institutional context, and guideline design factors shaping implementation**. Results**: Fifteen trainers (aged 34–55; mostly with bachelor's or master's degrees; 3–13 years of training experience) from TBS headquarters and zonal offices participated. Trainers demonstrated strong awareness of QA training guidelines

for small-scale food processors and used adaptive methods such as storytelling and demonstrations, but their delivery was constrained by systemic barriers including outdated materials, inadequate resources, large class sizes, and inadequate institutional support and follow-up. **Conclusion:** The study highlights the critical role of trainers as frontline implementers of QA training guidelines and underscores the need for stronger institutional and pedagogical support to enhance the effectiveness and sustainability of training programs. These insights contribute to implementation science and provide actionable evidence for strengthening regulatory-driven capacity building in food safety within Tanzania and comparable contexts globally. **Recommendations:** Strengthening TBS's training of trainers is critical. This includes updating and simplifying guidelines for SME realities, equipping trainers with participatory and digital pedagogical skills, and providing stronger institutional support such as adequate materials, refresher courses, decentralized planning, and systematic follow-up. Broader stakeholder involvement including ministries, local governments, and industry associations is also necessary to reinforce trainer capacity and sustain effective QA training.

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11. Ali, A.M. (2025). Prevalence of low back pain among nurses working in intensive care unit and high dependency unit at Muhimbili national hospital, Tanzania. Muhimbili University of Health and allied sciences.

Abstract

Background: Lower back pain (LBP), the leading cause of years lived with disability globally, affects 40% to 90% of nurses due to their physically demanding roles, with ICU and HDU nurses at higher risk. In Tanzania, factors such as repetitive lifting, improper posture, insufficient assistive devices, and extended working hours heighten LBP risks among nurses at Muhimbili National Hospital. Addressing these challenges through targeted research and interventions is critical to improving nurses' occupational health and well-being. **Objective:** To determine the prevalence and risk factors of lower back pain among nurses working in ICUs and HDUs at Muhimbili National Hospital. **Methods:** An analytical cross-sectional design was used with a quantitative approach to determine the prevalence and factors associated with low back pain among nurses working in the Intensive Care Unit and High Dependency Unit at Muhimbili National Hospital, Tanzania. Conducted at MNH Upanga, the study focused on HDU and ICU nurses with at least one year of experience, employing stratified random sampling to select 128 participants proportionally. Data were collected using structured questionnaires and analyzed with SPSS version 27. Descriptive statistics summarized sociodemographic characteristics and prevalence, while inferential statistics (Chi-square and logistic regression) were used to identify significant associations. A p-value of 0.05 was considered statistically significant. **Results:** The study involved 128 participants, primarily young adults aged 18–35 (75.8%), with a mean age of 33.2. Most were female (59.4%), married (57.8%), held a diploma (52.3%), and worked in the ICU (55.5%). The prevalence of lower back pain (LBP) was high at 63.3%. In multivariable logistic regression, significant protective and risk factors were identified. Younger nurses aged 18–35 and 36–55 had reduced odds of low back pain compared to those above 55 years (AOR=0.67; 95% CI: 0.49–0.96 and AOR=0.65; 95% CI: 0.48–0.89, respectively). Nurses with a certificate qualification were more likely to experience low back pain compared to those with a master's

degree (AOR=1.80; 95% CI: 1.39–2.84). Having 1–2 years of work experience was associated with lower odds compared to more than 5 years (AOR=0.64; 95% CI: 0.59– 0.92). Bending or twisting during work significantly increased the likelihood of low back pain (AOR=2.13; 95% CI: 1.87–4.76). Availability of lifting aids reduced the odds (AOR=0.77; 95% CI: 0.66–0.96), while having adequate staff during patient positioning showed a strong protective effect (AOR=0.08; 95% CI: 0.04–0.93). Other variables, including sex, BMI, working hours, physical workload, and lifestyle factors, were not significantly associated with low back pain in the adjusted model. **Conclusion:** This study revealed a high prevalence of lower back pain among nurses in ICUs and HDUs. Key factors linked to the pain included frequent bending/twisting, lack of lifting aids, lower education. Organizational and physical demands had a greater impact than individual or psychosocial factors. **Recommendations:** Muhimbili National Hospital should address this issue by improving workplace ergonomics and staffing during physically demanding tasks. Regular training on safe patient handling and providing mechanical aids can reduce risk. Special attention should be given to vulnerable groups like older and less-educated nurses to enhance workplace safety and health. ***Key terms:*** *Lower Back Pain, nurses, ICU, HDU.*

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12. Ali, B.M. (2025). Clinical characteristics and surgical outcome of oesophageal atresia at Muhimbili National Hospital, in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Esophageal atresia is the most frequent congenital malformation of the esophagus and often accompanied by tracheoesophageal fistula. In Sub-Saharan Africa, esophageal atresia / tracheoesophageal fistula (EA/TEF) continues to pose a significant threat of morbidity and mortality. It is significant to assess the surgical outcomes of esophageal atresia / tracheoesophageal fistula (EA/TEF). **Objective:** The main aim of the study is to determine clinical characteristics, surgical outcome and survival probability of the patients with esophageal atresia in Muhimbili National Hospital (MNH). **Materials and methods:** A retrospective cohort study was conducted at Muhimbili National Hospital in Dar es Salaam, Tanzania for all the newborns admitted with esophageal atresia/tracheoesophageal fistula (EA/TEF) and who underwent surgery from January 2014 to December 2024. The information about EA/TEF surgery was filled in a pre-tested checklist. This was obtained from patient's clinical records/files, paediatric registry books and Jeeva systems, including patient demographics, clinical presentations, laboratory and radiologic investigations, surgical procedures, and outcomes. Descriptive statistics such as frequency and means were used to summarize and describe obtained data by using (SPSS) version 25 and Kaplan meier survival estimator was used to assess survival probability. **Results:** Among the 71 neonates who underwent surgical repair, the median gestational age at birth was 38 weeks (IQR: 36–40), with the majority being term births 53 (74.6%). Gross Type C was the most common anatomical variant, observed in 62 cases (87.3%). Most neonates 63 (88.7%) were delivered at peripheral hospitals, with a mean birth weight of 2600 (SD 0.65) grams. A significant number presented with established pneumonia 46 (64.8%), and associated anomalies were identified in 39 patients (54.9%). Postoperative complications were common, with mortality being the vi most frequent (78.8%), followed by sepsis (31.8%). The overall 30 days survival probability was 29%.

Conclusion: This study highlights a high mortality and complication rate among neonates with EA/TEF. Contributing factors include delayed surgical intervention, associated anomalies, and limited neonatal care capacity. Most cases were referred from peripheral facilities with late presentation. Early diagnosis and timely referral are critical to improving outcomes.

13. Ali, L.S. (2025). Middle ear effusion among children with cerebral palsy attending paediatric neurology clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Middle ear effusion (MEE) is common in children with cerebral palsy due to impaired eustachian tube function, which increases their vulnerability to ear-related problems and can worsen their existing neurological deficits. These children often experience delayed speech and language development due to cognitive, sensory or speech-motor impairments. The negative impact of middle ear effusion can affect the rehabilitating children with cerebral palsy, which may add further obstacles to their quality of life. In Tanzania, studies examining MEE in children with cerebral palsy are still lacking, despite the considerable burden of hearing impairment in this group. **Objective**: The study aimed at determining the prevalence**,** laterality and associated factors of middle ear effusion among children with cerebral palsy attending pediatric neurology clinic at Muhimbili National Hospital.**Materials and methods**: This was an analytical cross-sectional study which was conducted in pediatric neurology clinic at Muhimbili National Hospital from September 2024 to February 2025 to patients aged 1 to 17 years who have been diagnosed with cerebral palsy. Clinical history and physical examination of ear, nose and throat, including otoscopy were performed followed by tympanometry test as the diagnostic tool for middle ear effusion. Standardized structured questionnaire was used for recording patients' demographic data, clinical and tympanometry findings. All patients underwent a lateral nasopharyngeal X-ray to check for adenoid hypertrophy. Data were analyzed by using Statistical Package for Social Sciences (SPSS) version 24. Cross-tabulation and the Chi-square test were used for statistical associations and compare proportions. The logistic regression analysis were performed to determine factors associated with middle ear effusion. P value <0.05 was considered statistically significant. **Results:** A total of 203 children with cerebral palsy were enrolled in this study. Forty-five (22.2%) were diagnosed with middle ear effusion. Most affected age group was 1-4 years (24. 1%). The prevalence of middle ear effusion was slightly higher in males (22.6%) compared to females (21.4%). The mixed type of cerebral palsy was found to have the highest prevalence of middle ear effusion (33.3%) followed by the dyskinetic type (22.4%), spastic (21.2%) and the least was ataxic type (11. 1%). Majority (57.8%) had bilateral involvement, while 42.2% had unilateral (22.2% and 20.0% right and left involvement by MEE respectively). Breastfeeding for less than 6 months (aPR =2.1, 95% CI: 0.83-5.18, P=0.036), history of nasal regurgitation of feeds (aPR = 2.8, 95% CI: 1.38-5.91, p = 0.04) and adenoid hypertrophy (aPR = 3.0, 95% CI: 1.49-6.10, p =0.002) were significantly associated with higher odds of middle ear effusion. **Conclusion:** Middle ear effusion was found to be prevalent among children with cerebral palsy. Majority had bilateral MEE and was significantly associated with factors such as breastfeeding for less than six months, nasal regurgitation of feeds and adenoid hypertrophy**.**

14. Ali, S.S. (2025). Prevalence and factors associated with stunting among children aged 6-36 months in the Fishing Community, Kojani Island, Pemba, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Stunting remains a global public health problem that accounts for more than one-third of child mortality worldwide. It is considered as the most important risk factor for disease burden among young children in developing countries. Objective: This study aimed to assess stunting prevalence and its associated factors among children aged 6-36 months living in the fishing community, Kojani Island, Pemba. **Methodology:** A household community-based analytical cross-sectional study was conducted in the fishing community, Kojani Island, Pemba, among a randomly selected 291 children aged 6-36 months and their mothers. Data on the background information and anthropometry measurements were collected through face-to-face interviews. Anthropometric measurements were converted to height/length for age Z-score. Data analysis was done using Stata version 17.0 and ENA software. Descriptive statistics and Poisson regression were applied to determine the prevalence and associated factors. **Result:** The study observed a 54.1% of children were stunted. Household food insecurity and low dietary diversity were common in the study area. Children aged 12-23 months had 1.38 times higher risk of stunting compared to those aged 6-11 months (APR=1.38,95%CI:0.10 1.91), optimal birth weight lower risk of stunting (APR=0.64,95% CI:0.35-0.98). Other factors that associated with stunting included mother's education (APR=1.27,95% CI:1.01-1.59, p=0.043), inadequate dietary diversity (APR=3.67,95%CI:1.51-8.89, p=0.004), and household food security (APR=3.70,95%CI:1.95-7.05, p<0.001). **Conclusion:** Stunting among children aged 6-36 months in this community remains a challenge. To address stunting in this area and others with similar settings, efforts should focus on issues related to household food security and dietary diversity, with a focus on children aged 12-23 months and ensuring that women attend school.

15. Ally, C. (2025). Estimating The Prevalence of Hypertension and Associated Risks Among Nurses at Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hypertension (HTN) is a significant public health issue in Tanzania, with an age-standardized prevalence of 33% among adults. Among those affected are healthcare workers, including nurses, who face an increased risk due to the demanding nature of their work environments. There is limited research on the prevalence and associated factors of HTN among nurses. Moreover, factors such as workplace stress and inadequate access to preventive healthcare remain underexplored in relation to HTN risks for nurses, highlighting a critical gap in the literature. **Aims:** To estimate the prevalence of hypertension and associated risk factors among nurses at Muhimbili National Hospital. **Material and method:** This study employs a cross-sectional design to estimate the prevalence among 269 nurses. A stratified random sampling was used to gather data from pre-tested structured questionnaires and direct blood pressure measurements taken twice, five minutes apart, in accordance with WHO standards. Analyses in

SPSS version 27 employed descriptive statistics, chi-square tests, and regression to identify Blood Pressure predictors based on a p-value < 0.05 for significance. **Results:** Of the 276 nurses surveyed, 27 (9.8%; 95% CI: 2.8–14.0) were hypertensive. High work-related stress was reported by 18 (6.5%) and was strongly associated with hypertension (AOR = 6.34, 95% CI: 2.02–19.84, p < 0.001). Age emerged as a strong predictor of hypertension among nurses, with those aged above 55 years having significantly higher odds (AOR = 25.17, 95% CI: 4.17–134.77. Protective factors included good dietary habits (AOR = 0.21, 95% CI: 0.11–0.39, p < 0.001) and performing night shifts (AOR = 0.33, 95% CI: 0.19–0.58, p < 0.001). **Conclusion:** Hypertension among nurses was associated with modifiable lifestyle and occupational factors, underscoring the need for targeted interventions that focus on diet, stress management, weight control, and routine health screenings.

16. Aloyce, A. (2025). Alcohol use disorders among medical students at Muhimbili university of health and allied sciences: prevalence and associated factors. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Alcohol use is a significant public health concern worldwide. Among university students; it is linked to poor academic performance, violence, and risky behaviors. Despite previous research on the prevalence of Alcohol Use disorders (AUD) and associated factors in Tanzania's general population and among young people; the same is unknown among medical students. **Objective**: This study aimed to determine the prevalence of AUD and the associated individual, relationship, and community factors among medical students at MUHAS.Materials and **Methods:** We conducted a cross-sectional survey at MUHAS; Dar es Salaam; Tanzania; between May and June 2024; among 234 medical students. A stratified sampling technique followed by proportionate simple random sampling was used to recruit participants. AUD was measured using the Alcohol Use Disorders Identification Test (AUDIT). A structured questionnaire was used to collect information on individual, relationship, and community factors. Descriptive statistics were collected, organized, and summarized in univariate and bivariable analysis. All factors with p<0.2 in Bivariable Robust Poisson regression analysis underwent Multivariable Robust Poisson regression analysis to examine the independent associations between AUD and independent variables. A p<0.05 was considered statistically significant. **Results:** Over the previous 12 months; 21.8% (n = 51) reported using alcohol, and Heavy Episodic Drinking (HED) was reported by 12.4% (n = 29). AUD (AUDIT≥8) was reported by about one in 10 (10.7%, n = 25). Male medical students (aPR = 5.10; 95% CI: 1.09-23.89; p = 0.039); those in the clinical study years (aPR = 2.89; 95% CI: 1.38-6.06; p = 0.005); and who reported experiencing mental distress (aPR = 3.84; 95% CI: 1.82-8.08; p<0.001) were more likely to report AUD.**Conclusions and Recommendations**: AUD is common among MUHAS medical students; associated with male sex, being in the clinical years of study and reported experience of mental distress. There is a need for routine screening of medical students for AUD, with particular attention to male students, those in the clinical study years, and those reporting experiences of mental distress, to ensure timely identification and linkage to appropriate care. ***Keywords:*** *Alcohol use, medical students, prevalence, associated factors.*

17. Amnaay, D. (2025). Fatigue and associated factors among patients with end-stage renal disease receiving hemodialysis at Muhimbili National Hospital, Dar es salaam-Tanzania. Muhimbili University of Health and Allied.

Abstract

Background Fatigue is a common and distressing symptom among patients with end-stage renal disease (ESRD) undergoing hemodialysis. It greatly affects physical, emotional, and cognitive functioning, leading to reduced productivity and quality of life. Many patients find even simple daily tasks exhausting compared to their pre-illness energy levels. **Aim** To determine the prevalence, clinical characteristics, and factors associated with fatigue among ESRD patients receiving maintenance hemodialysis at Muhimbili National Hospital (MNH), Dar es Salaam, Tanzania. **Methods** A quantitative cross-sectional study was conducted among 241 ESRD patients on hemodialysis at MNH, selected through convenience sampling. Data were collected using a structured Swahili questionnaire and review of medical records. The Multidimensional Assessment of Fatigue (MAF) scale measured fatigue, while the DASS-21 assessed psychological factors. Data were analyzed using SPSS version 25. Descriptive statistics summarized participants' characteristics, Chi-square tests identified associations, and modified Poisson regression determined independent predictors. **Results** Among 241 participants, 77.6% reported fatigue, with higher prevalence among females and older adults. Hypertension was the leading cause of ESRD (78%), and anemia was nearly universal (95.4%). Significant predictors of fatigue included having three or more chronic diseases (aPR=2.8, 95% CI=2.03-3.893, p<0.001), psychological stress (aPR=1.9, 95% CI=1.50-2.507, p<0.001), dialysis time set by healthcare providers (aPR=1.23, 95% CI=1.03-1.463, p=0.02), three dialysis sessions weekly (aPR=0.81, 95% CI=0.664-0.983, p=0.034), and longer travel distance to dialysis centers (aPR=0.81, 95% CI=0.69-0.954, p=0.011 for 2-9 km; aPR=0.84, 95% CI=0.70-0.966, p=0.046 for ≥10 km). **Conclusion** Fatigue is highly prevalent among ESRD patients on hemodialysis and is influenced by multiple clinical and psychosocial factors.

18. Amon, P. (2025). Facility and healthcare provider readiness for integrating birth companionship in Mwanza Region. Muhimbili university of health and Allied Sciences.

Abstract

Background: Birth companionship (BC), recommended by WHO, improves satisfaction, reduces labour duration, and enhances care quality but faces challenges in Tanzania due to inadequate infrastructure, policy support, and knowledge. However, there is limited evidence on the readiness of healthcare facilities and providers to integrate this practice, particularly in the Mwanza region, where cultural and systemic factors may influence its implementation. Aim: To assess the readiness of healthcare facilities and providers for integrating birth companionship in the Mwanza region. Materials and Methods: This study employed a cross-sectional study design utilizing a quantitative research approach to gather data on the readiness of healthcare providers and facilities for integrating birth companionship in the Mwanza region. Data were collected via structured questionnaires on healthcare provider knowledge and infrastructure adequacy. Descriptive and inferential statistics were used to analyse readiness for BC integration. Ethical approval was

obtained from MUHAS IRB, and informed consent was secured from all participants. **Results:** A total of 228 maternity healthcare workers from three Mwanza health facilities participated in the study. The mean age was 35.5 years (SD ± 8.4), and most were female (67.1%). Nurses and midwives comprised the majority (78.5%), with most holding a diploma (48.2%). Overall, 74.6% demonstrated adequate knowledge of birth companionship, with clinicians (83.7%) showing higher knowledge levels than nurses and midwives (72.1%). However, 81.1% of participants reported inadequate facility infrastructure to support birth companionship, with key barriers including limited space (65.8%), lack of private rooms (54.4%), absence of guidelines (53.1%), and insufficient staff support (60.5%). Significant independent predictors of readiness included adequate space in delivery rooms (AOR = 7.48, 95% CI: 2.18–25.67, p = 0.002), administrator support (AOR = 9.58, 95% CI: 3.23–28.45, p = 0.025), availability of birth companionship guidelines (AOR = 3.65, 95% CI: 1.33–10.04, p = 0.012), and adequate knowledge (AOR = 4.15, 95% CI: 1.18–14.67, p = 0.027). **Conclusion:** Healthcare providers and facilities in Mwanza demonstrate limited readiness to integrate birth companionship, primarily due to insufficient knowledge and inadequate infrastructure, such as private rooms and space. Support from medical staff and the presence of clear guidelines significantly enhance readiness. Improving facility infrastructure, encouraging staff support, and providing standardized guidelines are essential for successfully integrating birth companionship into maternity care.

19. Aneth, I. (2025). Adolescent girls' perception of modern contraceptive use: A case study in Geita district, Geita region. **Muhimbili University of Health and Allied Sciences.**

Abstract

Background: Adolescent pregnancy remains a significant global public health issue. In Tanzania, the adolescent pregnancy rate is 22%, with only 15.2% using modern contraceptives. Despite efforts to promote usage, pregnancy rates increased from 22.8% in 2010 to 26.7% in 2015/16. While previous studies examined contraceptive prevalence and related factors, little research has explored adolescents' perceptions. This study addresses that gap. Broad **Objective:** To assess adolescent girls' perceptions of modern contraceptive use in Geita District in Geita Region. **Material and Methods:** This study employed a cross-sectional design with a qualitative approach to examine adolescent girls' perceptions of modern contraceptive use in Geita District. Thirty girls aged 15–19 years were purposively chosen for in-depth interviews guided by a structured interview tool. The data was analyzed thematically. **Findings:** This study showed that although many adolescent girls have heard about modern contraceptives, their understanding remains limited due to inadequate and unreliable information. Some participants believed that the benefits of modern contraceptives extended beyond preventing unintended pregnancies. However, barriers such as parental opposition, fear of side effects, stigma, poor access, financial challenges, and misinformation hindered their use. While a few felt confident in accessing and using contraceptives, many lacked sufficient support and education, which limited their ability to make informed reproductive health decisions. **Conclusion:** Adolescent girls are aware of modern contraceptives and their benefits but encounter socio-cultural barriers, misinformation, and limited support, which restricts informed choices. Comprehensive education and targeted interventions are necessary to reduce stigma and empower their use.

20. Angumbwike, I. (2025). Prevalence of depression and its associated factors among pregnant women with pre-eclampsia admitted at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: It is estimated that depression affects around 17% of all pregnant women in developed countries, while the prevalence ranges from 15% to 65% in low- and middle-income countries. In Tanzania, there is currently a lack of data on the prevalence of depressive symptoms and the associated factors among women with preeclampsia. This study aimed to determine the prevalence of depression and the associated factors among women diagnosed with preeclampsia. **Methodology:** An analytical cross-sectional study was conducted at Muhimbili National Hospital between October 2024 and February 2025, involving 564 pregnant women admitted with a diagnosis of preeclampsia from 28 weeks of gestation. Depressive symptoms were assessed using the Edinburgh Postnatal Depression Scale. Data were analyzed using descriptive statistics and logistic regression. A p-value of less than 0.05 was considered statistically significant. **Results:** The prevalence of antenatal depression among women with preeclampsia was 35.1%. In the final multivariable logistic regression model emotional violence was approximately two times at higher odds of having depression as compared to women who had no history of emotional violence [AOR = 2.02; (95 % CI: 1.33–3.05)]. Women with a primary level of education were four times more likely to develop antenatal depression as compared to those with a higher level of education [AOR=5.15; (95% CI:2.75- 9.64)]. Additionally, women with one or more living children were found to have 60% less risk of developing antenatal depression than those with no living children [AOR=0.4, 95% CI: 0.2-0.7]. **Conclusion:** Approximately one-third of women with preeclampsia experienced antenatal depression. Exposure to intimate partner violence, particularly emotional violence, low social support, and a lower level of education were identified as significant risk factors. There is a need to integrate routine depression screening into antenatal care services in high-risk pregnancies to ensure early identification and management.

Keywords: *antenatal depression, preeclampsia, Edinburgh Postnatal depression score.*

21. Anotsitse, S.(2025) Prevalence of ocular diseases and associated factors among patients attending medically assisted treatment clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Medically Assisted Therapy (MAT) is a coordinated use of legally approved opioids to reduce addiction among patients with opioid use disorder. It includes the use of methadone, buprenorphine, and naltrexone in daily controlled doses. The abuse of opioids among patients undergoing MAT predisposes them to poor self-control which may result in motor traffic accidents and consequently cause ocular trauma. Furthermore, topical use of opioids increases the risk of dry eye disease and intravenous injections are the risk factors for developing retinal vascular diseases and vision-threatening diseases like endogenous endophthalmitis. Despite an increased risk of ocular diseases among these patients attending MAT clinics, there is no available data on the

prevalence of ocular diseases among patients with opioid use disorder at Muhimbili National Hospital (MNH). **Aim:** To assess the prevalence of ocular diseases and their associated factors among individuals attending the MAT clinic at MNH. **Materials and methods:** This was a hospital-based analytical cross-sectional study that was conducted at Muhimbili National Hospital. A simple random sampling technique was used to recruit participants from the MAT clinic at Muhimbili National Hospital; data was collected using a structured questionnaire, which involved interviews with the study participants followed by a comprehensive ocular examination. Data analysis was done using SPSS version 25.0. Statistical significance was defined as a p-value of less than 0.05. Multicollinearity between the factors was checked using the Variance inflation factor and then logistic regression analysis was done to determine the association between the variables in which the odds ratios (ORs) were obtained. **Results:** A total of 402 participants were recruited and analyzed, 95% were males. The median age was 45 (IQR 10.25) years, with the most common (51.7%) occupation being petty business. About 55.7% of study participants had been on MAT for less than 10 years. The majority had used other substances apart from opioids such as cannabis (100%) tobacco smoking (98.3%), and alcohol (68.2%). About 79.6% and 83.3% of participants had used heroin and cannabis for xi less than 10 years respectively while the majority (64.9%) had used tobacco for more than 10 years. About 45.8% had systemic comorbidities with the most common conditions being Tuberculosis (48.9%), HIV/AIDS (32.6%), Hypertension (10.9%), and Diabetes Mellitus (5.4%). The prevalence of ocular diseases among the study participants was found to be 71.4%. The most common ocular diseases were cataracts (15.4%), dry eye disease (15.4%), and optic neuropathy (13.6%). The odds of having ocular diseases were found to be higher among those aged >36 years, unemployed, and those who had used heroin for >10 years. **Conclusion:** The prevalence of ocular diseases among patients attending the MAT clinic at Muhimbili National Hospital was high. The most common ocular conditions were cataracts, dry eye disease, and optic neuropathy. Having an age of more than 36 years, being unemployed, and more than 10 years of heroin use was associated with increased chances of having ocular diseases. Recommendation: Efforts to screen ocular diseases and provide treatment among patients attending the MAT clinic at Muhimbili National Hospital are important. These can be achieved by establishing a link between the psychiatry and Ophthalmology clinic.

22. Antony, M. (2025). Process evaluation of factors influencing the implementation of HIV rapid test training for non-laboratory professionals through project echo in Ubungo Municipality, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Point-of-care (POC) technologies have expanded access to rapid diagnostics globally and in Tanzania. To address shortages of laboratory personnel and increase HIV testing coverage, the Ministry of Health adopted a task-sharing approach that allows non-laboratory healthcare workers to perform HIV Rapid Testing (HIV RT). Since 2016, the Ministry has implemented the Extension for Community Healthcare Outcomes (Project ECHO), a video conferencing-based platform used to deliver HIV RT training and support certification. Although this model has been scaled up, limited evidence exists on how HIV RT training under Project ECHO is implemented at the municipal level, especially regarding managerial, infrastructural, and

individual factors that influence its effectiveness. **Objective:** To evaluate the managerial, infrastructural, and individual factors influencing the implementation of HIV rapid test training for non-laboratory healthcare workers through Project ECHO in Ubungo Municipality, Dar es Salaam. **Methodology:** This study employed a cross-sectional process evaluation using qualitative exploratory methods. Data were collected through in-depth interviews with 26 purposively and conveniently selected healthcare providers and stakeholders participating in the ECHO based HIV RT training in five health facilities within Ubungo Municipality. Thematic analysis was carried out using NVivo 12 to identify key patterns related to implementation factors. Results: Implementation of ECHO-based HIV RT training was supported by leadership engagement, structured communication, accessible training materials, and participant motivation. Coordination through WhatsApp groups and availability of basic learning equipment also facilitated participation. However, several barriers affected implementation, including sessions scheduled during peak service hours, unreliable internet connectivity, lack of dedicated training rooms, frequent equipment and power interruptions, and competing clinical responsibilities. Individual factors such as motivation, digital literacy, and previous professional experience influenced participants' engagement and learning outcomes. **Conclusion:** Project ECHO has strengthened access to HIV RT training for non-laboratory testers in Ubungo Municipality, but its implementation is constrained by infrastructural limitations, scheduling challenges, and inconsistent technical support. Addressing these barriers— particularly improving internet connectivity, ensuring reliable equipment, allocating protected training time, and providing sustained managerial support —will enhance program effectiveness and long-term sustainability. Strengthening these areas will help maximize the impact of virtual HIV testing training and contribute to improved quality of HIV testing services in Tanzania.

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23. Anyosisye, S. M. (2025). Nurses' Knowledge and Factors Associated with Prevention of Catheter-Associated Urinary Tract Infections Among Patients in Intensive Care Units of Referral Hospitals in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Urinary catheterization is frequently performed in hospitals, particularly in intensive care units (ICU), and carries a significant risk for catheter-associated urinary tract infections (CAUTI). Prevention of CAUTI involves implementing a set of evidence-based practices, which, in most cases, are performed by nurses. However, the effectiveness of this implementation largely depends on the nurses' knowledge and the factors that influence their decision to perform such an intervention. Despite the availability of protocols, there is limited information on nurses' knowledge and the factors associated with preventing CAUTI in patients admitted to the ICU. **Objective:** This study aims to determine nurses' knowledge and factors influencing the prevention of CAUTI in critically ill patients at the National Referral Hospital, Dar es Salaam. **Results:** The study involved 143 nurses (78), 54.5% of whom were female. The largest group held a bachelor's degree, 66 (46.2%), and 60 (42.0%) had 1 to 5 years of ICU experience, 61 (42.7%) reported relevant experience to ICU, and 82 (57.3%) had formal training on CAUTI prevention. Overall, 80 (55.9%) of nurses demonstrated adequate knowledge of CAUTI prevention. A binary logistic

regression analysis reported that nurses with a diploma education level were independently associated with inadequate knowledge (AOR = 4.576, 95% CI: 1.716 12.201, p = 0.002), while receiving formal training significantly increased the odds of adequate knowledge (AOR = 16.241, 95% CI: 4.280–61.621, p = 0.001). **Conclusion:** The study revealed adequate knowledge levels among nurses regarding CAUTI prevention. The level of education, experience, and formal training was associated with the level of knowledge. To enhance CAUTI prevention practices, continuous professional development, structured training programs, and standardized CAUTI bundles should be implemented across ICUs.

24. Asante, F. (2025). Proportion and factors associated with depression in patients with traumatic spinal cord injury admitted at Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Depression as a public health problem in long-term rehabilitation of patientsis on the increase worldwide. In developing countries and worldwide, spinal cord injury (SCI) is a major public health issue. The devastating state of millions of people worldwide causes profound life changes. Reports confirmed that patients with SCI with associated health issues were affected by depression. However, there is a scarcity of data on depressionand its associated factors in patients with spinal cord injury in developing countries. **The main objective** of the study was to determine the proportion and factors associated with depression among patients with spinal cord injury in adults. **Methodology:** This was a cross-sectional descriptive study that employed at the Muhimbili Orthopedic Institute. A total of 54 study respondents were purposively selected based on inclusion and exclusion criteria and the patient health questionnaire (PHQ-9) was used as a data collection tool. Descriptive statistics was used to obtain Mean and Standard deviation for continuous variables while proportions and frequency was calculated for categorical variables. Pearson chi-square was conducted to assess the association between depression as a dependent variable and independent variables such as age, gender, marital status, education, occupation, etc. Multivariate analysis was conducted to identify the strength of the association whereby $p<0.05$ was considered as the statistical significance level. **Results:** Of the 75 patients screened, 54 met the inclusion criteria. Most were men (87%), aged 35–44, self-employed (72.2%), and urban residents (81.5%). The majority sustained injuries from motor traffic accidents (72.2%), mainly affecting the thoracic spine (46.3%). Complete spinal injuries (ASIA-A) were common (27.8%), and all participants reported pain, with over half experiencing moderate pain intensity (51.9%). Depression had a proportion of 18.5%, most had mild (70%) and others moderate (30%), as assessed by PHQ9. No socio-demographic factors showed significant associations with depression. However, severe pain was significantly associated (aOR: 8.03, p=0.030). Although cervical and complete SCI (ASIA- A) showed higher crude odds, they were not statistically significant after adjustment. **Conclusion:** The study found a depression proportion of 18.5% among patients with traumatic spinal cord injuries (TSCI) admitted at Muhimbili Orthopedic Institute. While socio-demographic factors were not significantly associated with depression, clinical factors especially severe pain were strong predictors. These findings highlight the importance of addressing clinical burdens, particularly pain, in managing mental health among

TSCI patients. **Recommendations:** Effective pain management and early depression screening should be integrated into TSCI care. Holistic treatment approaches addressing both physical andpsychological needs are essential. Routine mental health screening, comprehensive pain management should be incorporated into Spinal cord injury rehabilitation protocols to improve patient outcomes.

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25. Asia, M.S. (2025). Clinical Profile and Factors Associated with Outcomes Among Non-Traumatic Critically Ill Adult Patients Presenting at The Emergency Department in Regional Hospitals in Zanzibar. Muhimbili University of Health and Allied Science.

Abstract

Background: Non-traumatic critical illnesses are a significant cause of morbidity and mortality in emergency departments, particularly in resource-limited settings like Zanzibar. Despite their high burden, data on the prevalence, clinical characteristics, and short-term outcomes of critically ill adult patients in Zanzibar's emergency departments remain scarce. This study aims to determine the proportion of critically ill non-trauma patients, their clinical profiles, 24- and 48-hour mortality rates, and factors associated with mortality in regional hospitals across Zanzibar. **Methods:** A prospective observational cohort study was conducted at Mnazi Mmoja Hospital and Lumumba Regional Referral Hospital, enrolling non-traumatic critically ill adult patients aged 18 years and above. For this study, a critically ill patient was defined as one presenting with a triage early warning score (TEWS) of ≥7 and/or requiring emergency critical interventions such as intubation, inotropic support, or cardiopulmonary resuscitation. Real-time data were collected from arrival at ED through disposition, patients' outcomes at 24 and 48 hours were recorded, and were categorized as alive or deceased. For admitted patients, follow-up continued through hospital documentation to ensure complete outcome data. All data were entered into a structured Excel template, cross-verified daily for accuracy, and anonymized using unique identifiers. Descriptive statistics summarized demographic and clinical variables. Bivariate analysis was performed to determine factors associated with 24-hour and 48-hour mortality, using the Chi-square test (or Fisher's exact test, where appropriate). Statistical significance was set at $p < 0.05$. **Results:** Between May and June 2025, 119 non-traumatic critically ill adult patients were enrolled from the emergency departments of regional referral hospitals in Zanzibar, accounting for 15.3% (95% CI: 12.8%-17.8%) of all 779 adult ED visits. Most patients were male (60.5%), aged 18–35 years (33.6%), and from urban areas (63%). Shortness of breath (48.7%) was the most common presenting complaint, and hypertension (40.3%) and diabetes (16.8%) were the leading comorbidities. On arrival, 92.4% were tachypnoeic, and 63% had altered mental status (Glasgow coma scale 24 hours and 22.7% within 48 hours. Factors significantly associated with early death, based on bivariate analysis, included older age, shortness of breath, altered consciousness, low Glasgow Coma Scale, and

receipt of intubation or cardiopulmonary resuscitation. **Conclusion:** Non-traumatic critically ill adult patients accounted for over 15% of ED visits, with notably high 24- and 48-hour mortality rates of 9.2% and 22.7%, respectively. Early mortality was strongly associated with clinical features such as respiratory distress, low consciousness level, and the need for critical interventions like intubation and CPR. These findings underscore the urgent need for improved triage, timely intervention, and resource allocation to reduce preventable early deaths in Zanzibar's emergency departments.

26. Ba'asba, S. (2025). Perioperative anxiety and associated factors among adult patients undergoing cataract surgery at selected tertiary eye units in Dar es salaam. Muhimbili university of health and Allied Science.

Abstract

Background: Cataract surgery is commonly done under local anesthesia in conscious patients who can easily experience perioperative anxiety. The prevalence of perioperative anxiety in developed countries ranges from 32 to 80%. Perioperative anxiety can increase morbidity and mortality due to released stress hormones such as cortisol and adrenaline hence decreased immunity and high risk of post-surgical complications like poor wound healing. In our locality the level of perioperative anxiety had never been assessed. Aim: This study assessed the level of perioperative anxiety and associated factors among adult patients undergoing cataract surgery at selected tertiary eye units. **Material and Methods:** A hospital-based cross-sectional analytical study was conducted among all adult patients attending the general ophthalmology clinic at MNH and CCBRT who were scheduled for cataract surgery from June to December 2023. A total of 390 participants were consecutively sampled for the study. Data was collected using an interviewer-administered questionnaire: The S-STAI scale was used to evaluate the level of perioperative anxiety. The data was analyzed using SPSS version 27. Binary logistic regression was done to check for association and P-value of <0.05 was considered statistically significant. **Results:** About 390 patients recruited, 212 were males and the age range was 18 to 91 years, with a median of 68 (IQR 63-74) Overall, 36.4% had significant level of preoperative anxiety with median score of 38 IQR (35-39). Postoperatively 33.8% had significant level of anxiety with a median score of 36 IQR (35-38). There was a statistically significant high level of preoperative anxiety among those patients who had fear of pain and blindness with AOR = 15.8, 95% CI: 2.0–124.2, AOR= 23.1, 95% CI: 4.1-371.9 respectively. **Conclusion:** The level of preoperative anxiety was moderate among our participants, and low postoperatively. Fear of pain and blindness were statistically significant contributors to preoperative anxiety. **Recommendation:** Thorough preoperative preparations, effective postoperative support services, and psychological interventions can help to eliminate anxiety throughout the perioperative period.

27. Jumanne, H. (2025). Occupational exposure to volatile organic compounds and respiratory symptoms among car painters in Kinondoni, Dar es Salaam. Muhimbili university of health and Allied Sciences.

Abstract

Background: Exposure to VOCs such as benzene, toluene, and xylene from car paint poses significant health risks. Due to extended exposure to volatile organic compounds (VOCs), 90% of car painters report experiencing shortness of breath, coughing, wheezing, and chronic respiratory disorders. Despite the expanding car painting sector in Tanzania, limited data exist on VOCs exposure levels and associated health outcomes. Objectives: This study aimed to determine occupational exposure of VOC and respiratory symptoms among car painters in Dar es Salaam. **Method:** The cross-sectional analytical study design was conducted involving 154 car painters from 34 workshops. Ambient air samples were collected by using Drager Accuro gas detector. Data on respiratory symptoms and exposure determinants were gathered via interviewer-administered\questionnaires and structured checklist. Descriptive statistics and Poisson Regression were used to analyze relationship between exposure variables and how they relate the outcome. **Results:** The study encompassed 154 participants from 34 garages, male, aged 27-31, with majority being involved in removing old paint from car and painting with a duration of employment between 6 to 10 years. The mean concentration of Benzene was 0.75ppm, 0.91ppm, 0.62ppm, Toluene was 100ppm, 91.42ppm, 68.09ppm and Xylene was 3.25ppm, 1.56ppm, 1.72ppm for enclosed, semi enclosed and open painting set up, respectively. The determinants of exposure included type of painting area set up, duration of current employment availability of storage facilities of paints, presence of Safety Data Sheets (SDS), type of paints and material used, use of personal protective equipment (PPE), methods used to minimize VOC exposure, access to medical surveillance, However, duration in current employment was significantly associated with an increase the risk of respiratory symptoms. Workers with more than 10 of experience had an aPR 1.22 (95% CI: 1.04–1.39, p = 0.044) and those with 6-10 years of experience had an aPR of 1.18indicating a higher likelihood of developing respiratory symptoms compared to those with 1–5 years of employment, and the overall prevalence of respiratory symptoms among car painters was 88.3%. **Conclusion and Recommendation:** Car painters in Tanzania are exposed to VOC due to the nature of chemicals they handle, substandard environmental conditions in garages, working duration and inadequate use of PPEs. The study revealed a high prevalence (88.3%) of respiratory symptoms among car painters, with duration of employment being significantly associated with increased risk of symptoms. There is a need for strengthened workplace regulations and enforcement mechanisms to ensure that spray painters adhere to minimum occupational health and safety standards.

28. Baharia, N.H. (2025). Assessment of the occurrence of congenital tooth agenesis and its related factors among 10-16-year-old orthodontic patients attending the MUHAS dental clinic. Muhimbili University of Health and Allied Sciences

Abstract

Background: Tooth agenesis is one of the most common developmental dental anomalies in humans, exhibiting significant variability in its distribution among different populations, genders, and geographic locations. It can occur as either a syndromic or isolated condition. The isolated form of tooth agenesis appears without any associated syndrome. Several factors have been linked to tooth agenesis, with documented associations between tooth agenesis and various types of malocclusions. Additionally, sociodemographic factors such as age, sex, race, geographic location,

and socioeconomic status also show associations with tooth agenesis. However, data on both types of congenitally tooth agenesis and the associated factors in the Tanzanian population could not be retrieved. **Aim:** The aim of this study was to assess the prevalence of congenital tooth agenesis and associated factors among orthodontic patients aged 10 to 16 years at MUHAS dental clinic, Tanzania. **Materials and Methods:** This was a hospital-based cross-sectional study that involved 300 participants seeking orthodontic treatment at the MUHAS Dental Clinic. The consecutive sampling method was used, where every patient who met the inclusion criteria was included in the study. Clinical history, demographic characteristics, socioeconomic factors, and Angle's malocclusion were recorded in specifically designed forms for the study. Orthopantomograms (OPG) of every participant were examined to determine the prevalence and distribution of tooth agenesis. Data was analysed using the Statistical Package for Social Sciences (SPSS) program version 27.0. Frequency distributions were generated; bivariate association was tested using the Chi-square test (CI), and the p-value was set at p 0.05. **Results:** The prevalence of congenital tooth agenesis was 12% (N=300). There was no association between congenital tooth agenesis and age, sex, parental education, income, employment, or sagittal malocclusion (Class I, II, III). On the other hand, there was an association between tooth agenesis and functional problems (p=0.003). Nevertheless, growth problems were not associated with the occurrence of congenital tooth agenesis. 6 **Conclusion:** The prevalence of congenital tooth agenesis was 12%, and was associated with functional problems. Sociodemographic factors and sagittal malocclusion were not associated with congenital tooth agenesis in this sample of orthodontic patients. This highlights that tooth agenesis as a common global orthodontic concern, necessitating careful diagnostic, functional, and esthetic management, often with multidisciplinary input. This study contributes to filling the gap in local epidemiological data and supports early diagnosis and comprehensive management strategies.

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29. Bakari, I. A. (2025). Ocular sonographic patterns and associated predictors of raised intracranial pressure among paediatric patients with head injury attending Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Raised intracranial pressure is a critical condition in children with head injuries, potentially leading to severe neurological complications and death. Early detection is crucial, however gold standard monitoring and diagnostic methods like External Ventricular Drainage are invasive hence pose risks to the patient. Ocular sonography Optic Nerve Sheath Diameter (ONSD), presents a promising, non-invasive alternative for ICP assessment. Despite its potential, its application in pediatric trauma care remains underutilized. **Objective:** To determine the Ocular Sonographic patterns and associated predictors of raised Intracranial Pressure among pediatric patients with head injury attending Muhimbili Orthopaedic Institute from June 2024 to March 2025 **Materials and Methods:** A hospital-based prospective cross-sectional study was conducted at Muhimbili Orthopedic Institute, enrolling 113 pediatric patients with traumatic brain injury (GCS ≤14) between June 2024 and March 2025. Data were collected using a structured tool, and

ocular sonography was performed with B-mode ultrasound to measure the Optic Nerve Sheath Diameter (ONSD) 3 mm behind the globe. Data were analyzed using SPSS v25 using descriptive statistics and logistic regression to assess predictors of raised intracranial pressure. **Results:** Among 113 pediatric head injury participants (mean age 8.1 years, 69.9% male), most had moderate TBI (74.3%). Ocular ultrasound detected optic disc elevation in 6.2%, while other abnormalities were absent. The mean Optic Nerve Sheath Diameter (ONSD) increased with age and was the strongest independent predictor of raised intracranial pressure (AOR 14.08, 95% CI: 5.08–16.75, p

30. Bakari, R.A. (2025). Factors determining the surgical treatment outcomes among infants with infantile hypertrophic pyloric stenosis at Muhimbili National Hospital. Muhimbili university of Health and Allied Sciences

Abstract

Background: Infantile hypertrophic pyloric stenosis (IHPS) is the most common surgical cause of non-bilious vomiting in infants, necessitating timely surgical intervention. Despite established treatment protocols, outcomes vary widely based on clinical and demographic factors. **Objective:** This study aimed at assessing the surgical treatment outcomes among infants with IHPS at Muhimbili National Hospital (MNH). **Methodology:** This was retrospective cohort study of 100 infants with intra-operatively confirmed IHPS who underwent pyloromyotomy between 2015 and 2024. Data on demographics, clinical presentation, biochemical markers, surgical details, complications, and outcomes were analyzed. Chi-square and multivariate logistic regression were applied to determine associations, with $p<0.05$ considered statistically significant. **Results:** IHPS constituted 12.24% of all infant laparotomies. The median age was 45 days, with a male to female ratio of 4.3:1. Vomiting (100%), weight loss (17%), and visible gastric peristalsis (21%) were common presentations. Electrolyte imbalances were frequent: hypokalemia (64%), hyponatremia (58%), and hypochloremia (66%). Surgical complications occurred in 30% of infants, with a mortality rate of 6%. Significant factors associated with prolonged hospital stay included preterm birth (AOR=8.05, p=0.032) and low hemoglobin (p=0.040). **Conclusion:** IHPS is a common and surgically manageable condition in infancy. However, preoperative factors such as prematurity and anemia significantly affected outcomes. Strengthening preoperative optimization could improve survival and reduce hospital stay. **Keywords**: Infantile hypertrophic pyloric stenosis, outcome, optimization, pyloromyotomy, prolonged, mucosal perforation.

31. Banda, A.P. (2025). healthcare providers' experiences and perceptions in provision of preconception care services at Mnazi Mmoja Hospital, Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences

Abstract

Background: Preconception care (PCC) is a key strategy for reducing preventable maternal and child deaths. The global Maternal Mortality Rate (MMR) stands at 223 per 100,000 live births, with 545 in Sub-Saharan Africa and 104 in Tanzania. Nearly 95% of maternal deaths occur in Low- and Middle-Income Countries (LMICs). Effective PCC can help identify and manage health issues

before pregnancy, but in Tanzania, it remains underappreciated as a standalone service. **Aim of the study:** This study explored the experiences and perceptions of healthcare providers (HCPs) in the provision of preconception care (PCC) services to women of reproductive age at Mnazi Mmoja Hospital, Dar es Salaam. **Materials and methods:** A case study design with a qualitative approach was conducted to explore healthcare providers' experiences and perceptions of Preconception Care (PCC). Fourteen HCPs from Reproductive and Child Health Clinics, with a minimum of three years of experience, were purposefully selected. In-depth interviews were conducted using a semi-structured guide, recorded, transcribed, and analyzed using inductive-deductive thematic analysis. **Results:** HCPs understood the importance of preconception care (PCC) and associated risks of missing it, such as a woman conceiving with pre-existing complications, risk for a child born with neural tube defects, and increased chance of high-risk pregnancy and high-risk infant. But lacked adequate knowledge of its full content and expressed low confidence and competence in delivering the services. Major challenges identified included insufficient infrastructure for stand-alone PCC service provision, staff shortages, lack of PCC guidelines and educational materials, lack of refresher training on PCC, and limited community awareness towards PCC services. HCPs also shared their experiences on the implementation of PCC, which showed that Services were offered inconsistently and opportunistically due to competing clinical demands. However, drivers such as teamwork, organizational support, provider motivation, and awareness of PCC's health benefits facilitated service delivery. **Conclusion:** This study highlights the gaps and opportunities in the provision of preconception care (PCC) services. While healthcare providers understand the value of PCC, challenges such as limited knowledge, lack of guidelines, inadequate infrastructure, and low community awareness hinder effective implementation. However, teamwork, provider motivation, and leadership support were identified as key enablers. Addressing these barriers through capacity building, community education, and system-level planning can strengthen PCC services and improve maternal and newborn health outcomes. **Recommendations:** Based on the study findings, it is recommended that preconception care (PCC) services be integrated into existing healthcare units such as family planning, outpatient, and antenatal clinics. Establishing dedicated PCC clinics and involving Community Health Workers (CHWs) can help improve service reach and community awareness. Policy-level engagement is crucial, including incorporating PCC into national reproductive health strategies and allocating appropriate resources. Education and training should be strengthened by including PCC in medical and nursing curricula and offering regular refresher training for providers. Additionally, community outreach through digital platforms, mass media, and engagement with religious and local leaders can enhance public awareness and cultural acceptance of PCC services

32. Basilio, J. (2025). Facilitators and barriers to the implementation of maternal and perinatal death surveillance and response recommendations in Kigoma Region. Muhimbili university of health and Allied Sciences.

Abstract

Maternal and Perinatal Death Surveillance and Response (MPDSR) is a systematic approach aimed at reducing maternal and perinatal mortality through the identification of causes of death and the implementation of recommendations to prevent future occurrences (1). This framework

emphasizes not only the surveillance of death but also the active response to findings, which includes policy changes, healthcare improvements, and community engagement(2). The effectiveness of MPDSR relies heavily on its implementation within health systems, necessitating an understanding of both facilitators that promote successful adoption and barriers that hinder progress. Globally, maternal and perinatal mortality remains a significant public health challenge (3). According to the World Health Organization (4), approximately 295,000 women died during and following pregnancy and childbirth in 2020, with most deaths occurring in low-resource settings where healthcare infrastructure is inadequate. Almost 95% of all maternal deaths occurred in low and lower-middle-income countries in 2020, and most could have been prevented (4). Sub-Saharan Africa and Southern Asia accounted for around 87% (256,000) of the estimated global maternal deaths in 2020. Sub-Saharan Africa alone accounted for around 70% of maternal deaths (206,000), while Southern Asia accounted for around 16% (47,200) (4).Tanzania has made progress in improving maternity and child care, currently maternal mortality ratio is estimated to be approximately 104 deaths per 100,000 live births (5). Although the number of maternal deaths in Kigoma region had significantly decreased from 102 in 2022 to 76 in 2023 per 100,000 live births, Kigoma region still accounts for 5.6% of all maternal deaths in Tanzania Mainland, ranking fourth out of the 31 regions in the country (6) and suggesting that interventions should have been prioritized to further reduce fatalities. These statistics underscore the urgent need for effective MPDSR systems to identify preventable causes of these deaths and implement actionable solutions The failure to effectively implement MPDSR recommendations can lead to continued high rates of maternal and perinatal mortality (3). This not only affects individual families but also has broader societal implications, including increased healthcare costs, loss of productivity due to premature death or disability among mothers, and long-term impacts on child development. Furthermore, communities may face reduced productivity as families cope with grief or caregiving responsibilities for surviving children (3). Various initiatives have been undertaken globally to enhance MPDSR implementation. Countries like South Africa have established national guidelines for MPDSR that include training programs for healthcare providers on data collection and analysis related to maternal and perinatal deaths (7). Additionally, international organizations such as WHO have developed toolkits aimed at strengthening MPDSR processes by providing frameworks for data utilization in policy-making (8). However, despite these efforts, there remains considerable variability in how effectively these recommendations are implemented across different regions. Despite existing frameworks and guidelines for MPDSR implementation, significant gaps persist in understanding the specific facilitators and barriers encountered by healthcare systems at local levels. Research often highlights general challenges such as resource limitations or lack of training but fails to provide detailed insights into conceptual factors influencing implementation success or failure. There is a critical need for qualitative studies that explore these dynamics in diverse settings to inform tailored strategies that enhance adherence to MPDSR recommendations. Problem Statement: The effective reduction of maternal and perinatal deaths in Tanzania is hindered by the substantial obstacles encountered in the implementation of the MPDSR recommendations (9). To find preventable causes and enhance the provision of health services, the MPDSR framework is intended to systematically analyze pregnancy and childbirth-related mortality. However, several facilitators and barriers have been found that impact the effective implementation of these recommendations. Key barriers include inadequate training for

healthcare providers, insufficient resources, lack of community engagement, and systemic issues within the healthcare infrastructure (10). These barriers not only make it more difficult to operationalize MPDSR, but they also keep women and babies in a loop of poor health outcomes. The magnitude of this problem is alarming because the maternal mortality ratio in Tanzania is estimated at approximately 104 deaths per 100,000 live births. If MPDSR guidelines are not followed, there will be severe consequences, such as ongoing maternal and perinatal mortality, higher healthcare expenses from complications from avoidable deaths, and a wider social impact as families are left without vital caregivers. A considerable gap still exists between the creation of policies and their actual application at the local level, despite the Tanzanian governments and foreign organizations' attempts to address these problems through policy changes and capacity-building programs. Recent statistics have shown that Tanzania has done well in reducing maternal death. However, if these obstacles are not dealt with quickly, mortality rates may eventually stagnate or even rise as a result of ineffectively implementing MPDSR recommendations. The purpose of this study is to gather insight into both enduring facilitators and barriers to the successful implementation of MPDSR recommendations in the Kigoma region setting. This study aims to give healthcare professionals practical insights on how to improve maternal and perinatal health outcomes in the Kigoma region by identifying critical characteristics that support or impede successful MPDSR practices.

33. Bendera, S. M. (2025). The effect of age at diagnosis of breast cancer: a comparative study of patterns and outcome of treatment between early-onset breast cancer and late-onset breast cancer. Muhimbili university of health and Allied Sciences.

Abstract

Background: Breast cancer occurs at significant rates in women under 40, referred to as early-onset BC (EOBC), compared to women over 40, referred to as late-onset BC (LOBC). EOBC represents 6–10% of cases in resource-rich countries but rises to about 20% in resource-limited settings. EOBC is an aggressive subtype characterized by high proliferation, poor differentiation, frequent HER2 positivity, hormone receptor negativity, and a higher risk of local recurrence. This study evaluated the prevalence of EOBC and compared its clinical characteristics and treatment outcomes with those of LOBC among patients treated at the Ocean Road Cancer Institute (ORCI) from 2019 to 2021. Methodology: In this retrospective cohort study, 268 women with histologically confirmed breast cancer were recruited from a sampling frame of 1,683 women. The characteristics of women with EOBC and LOBC were compared, as well as the 5-year overall survival (OS) and disease-free survival (DFS). The predictors of 5-year OS among women with EOBC were determined. Survival curves were drawn using the Kaplan-Meier method and then compared using the log-rank test. Cox regression was used in multivariate analysis. Data were analyzed using SPSS version 27, with p-values < 0.05 considered statistically significant. **Results:** The prevalence of EOBC was 16%. Women with EOBC had a significantly lower mean age (34 years) compared to those with LOBC (53 years). Most women in both groups presented with stages III–IV BC, though EOBC showed a trend of a higher proportion of T3–T4 tumors and nodal positivity. Hormone receptor expression (ER, PR, HER2) did not differ significantly between the groups, though EOBC showed a trend toward more triple-negative and HER2-positive BC. There

was a trend of more relapses in EOBC (46.5%) compared to LOBC (33.9%) (p = 0.067). Women with LOBC exhibited significantly better DFS (68.0%) compared to women with EOBC (52%, p = 0.05). Similarly, women with LOBC patients showed superior OS (62.0%) compared to women with EOBC (41.0%). Women with EOBC had a significantly higher mortality risk than those with LOBC, driven by advanced TNM stage, low BMI, poor performance status, family history of breast cancer, limited use of radiotherapy, lack of insurance, and poor socioeconomic status. **Conclusion:** Women with EOBC, in comparison to those with LOBC, presented with more advanced and biologically aggressive disease, resulting in poorer survival outcomes and higher mortality risk influenced by socioeconomic and treatment-related factors.

34. Bikiz, R. (2025). Assessment of magnitude of electrolyte derangements and associated factors among patients undergoing cardiac surgery at JKCI-Tanzania.Muhimbili University of Health and Allied Sciences.

Abstract

Background: Electrolyte derangements are common among patients undergoing cardiac surgery with CPB. They are associated with cardiovascular emergencies that may cause cardiac arrest and impede resuscitation efforts. Other complications are confusion, seizures, and coma. Cardiopulmonary bypass (CPB) increases patient susceptibility to electrolyte derangement despite supplementing some electrolytes. Determining the magnitude of electrolyte imbalance and its associated factors will contribute to knowledge among health providers, and that will minimize the emergency complications resulting from electrolyte derangements. **Aim of this study:** This study aimed to determine the magnitude of electrolyte derangements and associated factors among patients undergoing CPB during heart surgery at JKCI-Tanzania. **Methodology:** The study was an institution-based cross-sectional study carried out among patients undergoing heart surgery at JKCI from March to May 2025. Investigator checklist, perfusion, and ICU charts were used to collect patient demographics, clinical and surgical information. Serum electrolyte levels were checked before surgery, after initiating CPB, after 30minutes of CPB, after full rewarming before CPB termination, and 1hour post-surgery. Descriptive analysis was used to summarize categorical variables and presented as percentages. Bivariate analysis using chi-square tests and univariate logistic regression was done to explore the association between each independent factor and electrolyte derangements. Variables with $p<0.2$ were included in multivariate logistic regression to identify statistical significance. Odds ratios (ORs), 95% (CIs), revealed the strength of associations, and p-values of < 0.05 for statistical significance. All analyses were performed using SPSS version 21. Ethical clearance was obtained from the MUHAS Research Ethics and Publication Committee, and the JKCI Research and Training Unit permitted the study. **Results:** All patients developed at least one electrolyte derangement at one point. Common electrolyte derangements before starting Surgery were Hyponatremia, Hypokalemia (all 28.9%), and Hypocalcemia 27.7%. During CPB, hypocalcemia 53%, hypokalemia and hypernatremia (39.8%); after Surgery, hypernatremia 13.3%, hyperkalemia 10.8%. Gender, BSA, hemodilution, type of defect, blood transfusion, ACC, and CPB duration revealed statistically significant associations with electrolyte derangements (at different time points). **Conclusion and recommendation:** Electrolyte derangements were common during cardiac surgery, and all patients developed at least

one derangement during surgery. Several variables showed significant associations at different time points assessed. In addition to routinely monitoring electrolyte levels during surgery, I recommend that Perfusionists and Anesthesiologists rely on and adopt scientific formulas used by advanced Cardiac centers to correct each electrolyte derangement without prioritizing some electrolytes while neglecting others. Use of miniaturized CPB circuits so that to reduce the extent of hemodilution and use fresh blood for transfusion.

35. Bilakwate, J.S. (2025). Effect of the implementation of school feeding programs on nutritional adequacy and cognitive performance among school-aged children in Kisarawe district, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The nutrition of school-aged children is a critical public health issue due to its profound influence on physical growth and cognitive development. In Tanzania, 11% of schoolaged children are thin, while 34% are anemic representing undernutrition. To address this, the country is implementing various initiatives to enhance feeding practices. One of them is the school feeding program, aiming to improve nutritional adequacy and ultimately nutritional status. However, there is inadequate evidence on the effect of participating in school feeding programs has on improving children's nutritional adequacy. Aim of the study: This study aimed to assess the effect of participating on school feeding programs on nutritional adequacy and cognitive performance among school aged children in Kisarawe district, Pwani region. **Methodology:** This was a school-based cross-sectional study conducted in Kisarawe district, Pwani region. Using multistage cluster sampling, a total of 10 representative schools were selected considering both urban and rural wards. A total of 300 students were randomly selected using number method and enrolled in the study. Data on dietary diversity and meal frequency was gathered using a 24-hour food recall a structured questionnaire administered through faceto-face interviews by trained researchers then classified using Dietary Diversity Score. Raven's Progressive Matrices tool was used to gather data on cognitive performance from each participant and a checklist was used to assess school feeding program status. Descriptive statistics was used to summarize the data on status of implementation of school feeding program among selected primary schools, and regression analysis was used to identify the effect of the intervention on nutritional adequacy and cognitive performance. **Results:** All ten schools had ongoing school feeding program, although being implemented partially. None of the school had met all implementation criteria as stipulated in the National Guideline for School Feeding Program. Even in these schools, not all students are covered by this intervention. Of the 300 students enrolled, only 65% participated in school feeding program. Those who participated in school feeding program were 45% more likely to eat food with at v least four groups in a day compared to those who did not (APR=1.45, 95% Cl:1 – 2.12, p=0.051), after adjusting for confounders and other covariates. Moreover, those who participated in school feeding program were 11 times more likely to get regular meals compared to those who did not eat at school (APR=11.68, 95% Cl: 2.81 – 48.53, p=0.001). However, in this study, participating in school feeding program was not significantly associated with cognitive performance. **Conclusion:** This study found a partial implementation of the school feeding program in Kisarawe district, Pwani region. The reason for such challenge included infrastructure

and logistical issues. Participating in school feeding program has effect in nutritional adequacy and cognitive performance. Key gaps identified included inadequate facilities and socioeconomic disparities. **Recommendations:** Strengthening infrastructure and improving meal quality are recommended to enhance program impact. **Key words:** School feeding program, nutritional adequacy, cognitive performance.

36. Bilali, H.M. (2025). The Use of Contraceptive Methods Among Women of Reproductive Age and The Growing Burden of Overweight and Obesity: Analysis of Tanzania Demographic and Health Surveys 1992-2022. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Women of reproductive age succumb to the growing burden of overweight and obesity compared to their male counterparts. Anecdotal evidence points to a possible link between rising burdens of overweight and obesity and modern contraceptive methods. A possible link between hormonal contraceptives and weight gain can be a potential drawback in mitigating challenges of modern contraception use in the context of other efforts to address the burden of non-communicable diseases. This study was designed to investigate the association between modern contraceptive use and the burden of overweight and obesity among women in Tanzania. **Methods:** This secondary data analysis utilized data from seven Tanzania Demographic and Health Surveys (TDHS) conducted in a span of three decades between 1992 and 2022. Data from a total of 186,474 women aged 15-49 years who met eligibility criteria were available through these surveys. Trend analyses were conducted to observe changes in the prevalence of overweight and obesity over time, while modified Poisson regression was used to explore the association between modern contraceptive use and overweight and obesity after adjusting for confounders and covariates in the last nationally representative survey. Data analysis was carried out using STATA version 15.1, with regional mapping done through QGIS version 3.28. **Result:** The burden of overweight and obesity increased from 11.3% in 1992 to 36% in 2022 (P=0.022), while the use of modern contraceptive methods increased from 7.8% in 1992 to 32.5% in 2022 (P=0.018). In the 2022 survey, the use of modern contraceptive was associated with higher burden of overweight and obesity (adjusted PR= 1.02 (1.00 to 1.03)), advanced age (APR=1.24; 95% CI 1.14 – 1.35), higher education (APR=1.13; 95% CI 1.07 – 1.19), widowhood (APR=1.13; 95% CI 1.08 – 1.19), no unmet need (APR=1.03;95% CI 1.01 – 1.05) and wealth index (APR=1.30; 95% CI 1.27 – 1.34).**Conclusion:** An alarming threefold increase in just three decades of the burden of overweight and obesity among women of reproductive age in Tanzania calls for targeted efforts addressing its determinants. While interventions focusing on women with advanced age and with socio-economic advantages are important, evidence calls for integrating family planning services with nutritional and lifestyle interventions in Tanzania and countries with similar contexts.

37. Bina, S.M. (2025). Factors influencing the usage of acrylic removable partial dentures among patients attending MUHAS dental clinic. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Acrylic removable partial denture is a common choice of treatment for replacement of missing tooth or teeth in most developing countries. Compared to other types of partial dentures, acrylic removable partial dentures are simple devices, with low technical demand and are less costly. In Tanzania, acrylic removable partial denture is the most available treatment option for partially edentulous patients. The success of denture prosthesis is however dependent on patient's acceptance and compliance to use them. In Tanzania studies have reported on the prevalence and need for removable partial dentures but there is scarcity of information on the usage of ARPD. **Aim:** To determine the factors influencing the usage of acrylic removable partial dentures among patients attending MUHAS dental clinic. **Methodology:** This cross-sectional quantitative study included 161 patients aged 18 years and above who had received acrylic removable partial dentures (ARPDs) at the MUHAS Dental Clinic in Dar es Salaam, Tanzania. Participants were selected using a systematic random sampling method with a sampling interval of 14, derived from a sampling frame of 2,328 eligible patients. Every 14th patient listed in the dental laboratory records was identified, and their contact information retrieved from the clinical database. The identified patients were contacted by telephone using a standardized protocol and invited for a follow-up visit. After obtaining informed consent, data were collected through a structured questionnaire comprising two sections: the first section included sociodemographic characteristics (age, sex, and level of education), while the second assessed patient-related outcomes including ARPD usage, chewing ability, speech ability, and esthetic satisfaction. Thereafter a clinical oral examination was done to evaluate factors that might affect the continuing use of dentures including location of edentulous areas, number of missing teeth and location of dentures in the jaws. Design characteristics of the dentures were evaluated by visual inspection and manual testing of denture support, retention and stability. [vi] Data were entered and analyzed using SPSS version 27.0. Descriptive statistics were generated in the form of frequency distributions, means and standard deviations. Bivariate analysis and modified Poisson regression were performed to determine associations between sociodemographic characteristics, patient-related factors, clinical factors and ARPD usage. A p value of < 0.05). Clinically, retention, stability and support were significantly associated with upper jaw ARPD usage ($p < 0.05$), while lower jaw ARPD usage was limited despite adequate clinical conditions. Poisson regression analysis revealed that speech satisfaction was the only significant independent predictor of ARPD usage for both jaws (Upper jaw: aOR = 0.228,95% CI= 0.079 – 0.662, P = 0.007; Lower jaw: aOR = 0.085, 95% CI= 0.024 - 0.298, P = 0.001), while other factors were not statistically significant in the adjusted model. **Conclusion:** These findings suggest that the continued use of ARPDs is more closely related to clinical and patient-related factors such as speech adequacy, and overall satisfaction rather than demographic characteristics.

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38. Biswamo, Y. (2025). Prevalence and Factors Associated with Perinatal Death at Igunga District Hospital in Tabora, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Perinatal mortality remains a significant public health challenge, particularly in low- and middle-income countries. Globally, the stillbirth rate is estimated at 13.9 per 1,000 births,

contributing to approximately 2.6 million stillbirths annually. South Asia records the highest rates (40–70 per 1,000 births), while Sub-Saharan Africa has an estimated stillbirth rate of 21.7 per 1,000 births. In Tanzania, the perinatal mortality rate is approximately 38 per 1,000 pregnancies. Despite various government interventions, the rates remain unacceptably high, particularly in Tabora region and Igunga District, where limited research has been conducted to identify specific determinants. Understanding the prevalence and contributing factors is essential for designing targeted interventions. Objective: To investigate the prevalence and factors associated with perinatal death at Igunga district hospital in Tabora region, Tanzania. **Methodology:** A retrospective cross-sectional study was used, a convenience sampling method, utilizing all available files with complete information on perinatal deaths to identify specific causes of perinatal death at Igunga Hospital. All files of perinatal deaths between 2024 to 2020 were reviewed, and only 365 files that met the inclusion criteria were analyzed. Data were collected using structured data abstraction tools and analyzed using SPSS v21 and Stata v17. Descriptive statistics summarized socio-demographic and obstetric characteristics. Bivariate analyses were performed using chi- square and Fisher's exact tests, and modified Poisson regression was used to identify factors independently associated with perinatal deaths. **Results:** The average age of participants was 26.7 years (SD ±7.3 years), with the majority of women falling within the 20–35-year age range (64.7%). The prevalence of perinatal deaths was 15.8%. The highest stillbirth rate was recorded in 2021 (15.2 per 1,000 deliveries), and the lowest in 2020 (10.9 per 1,000). Increased risk was associated with maternal age 36–45 years (aPR: 1.08; $p = 0.027$), secondary education (aPR: 1.29; $p = 0.003$), rural residence (aPR: 1.19; $p < 0.001$), and gestation of more than 40 weeks (aPR: 1.15; $p < 0.001$). Protective factors vi included a high socio-economic status (aPR: 0.53; $p < 0.001$) and attending at least 3 antenatal care visits (aPR: 0.82; $p = 0.004$). **Conclusion:** Perinatal mortality remains high in Igunga District, with birth asphyxia, prematurity, and neonatal sepsis being the leading causes. Maternal, fetal, and healthcare-related factors, including inadequate antenatal care, intrapartum complications, delayed decisionmaking, and rural residence, were key contributors. Strengthening maternal and newborn health services, ensuring timely risk identification, and addressing health system and socioeconomic gaps are essential for reducing preventable perinatal deaths in similar rural settings.

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39. Boimand, E. (2025). Out-of-pocket costs, financial toxicity, and quality of life related to mental health disorders among patients attending the mental health clinic at Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Mental disorders significantly contribute to the global disease burden, particularly in low- and middle-income countries like Tanzania, where limited funding results in substantial out-of-pocket (OOP) expenses. These financial burdens contribute to financial toxicity (FT), which may adversely affect patients' quality of life (QoL). **Objective:** To assess out-of-pocket costs, financial toxicity, and quality of life among patients with mental disorders attending the mental health clinic at Muhimbili National Hospital (MNH), Tanzania. **Methods:** A cross-sectional study was conducted among adults attending MNH's mental health clinic. Data were

collected using structured questionnaires incorporating the Comprehensive Score for Financial Toxicity (COST) and WHOQOL-BREF tools. Data were analyzed using descriptive statistics, t-tests, logistic regression, and one-way ANOVA. **Results:** Participants incurred notable monthly OOP expenses for medications (mean = TZS 40,454) and transportation (mean = TZS 14,082). Over half of the respondents (53.7%) experienced high financial toxicity, while 35.1% had moderate and 11.2% low toxicity. Financial distress indicators included difficulty affording treatment (59%) and borrowing money (56%). Quality of life scores were moderate across all domains, with psychological well-being being lowest (mean = 2.34). Low household income (< TZS 100,000) was significantly associated with higher financial toxicity (AOR = 3.10, 95% CI: 1.09–8.83, p = 0.034). **Conclusion:** Patients with mental disorders at MNH experience substantial financial burden and moderate quality of life, with income level strongly influencing financial toxicity.

40. Bonaventura, S.L. (2025). Immunohistochemical Evaluation of EGFR Expression Status in Non-Small Cell Lung Cancer Using Two Mutation-Specific Antibodies at Muhimbili National Hospital, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Non-small cell lung cancer (NSCLC) is the leading cause of cancer mortality worldwide, with a rising burden in sub-Saharan Africa. Epidermal Growth Factor Receptor (EGFR) mutations are key predictive biomarkers for targeted tyrosine kinase inhibitor (TKI) therapy, which offers improved outcomes over conventional treatment. In Tanzania, NSCLC management is challenged by late presentation, limited diagnostic capacity, and a lack of integration of EGFR mutation classification into treatment protocols. Immunohistochemistry (IHC) with mutation-specific antibodies provides a rapid, cost-effective alternative for detecting common EGFR mutations, enabling feasible incorporation of precision oncology into routine care in resource-limited settings. **Objective:** To evaluate the frequency, staining intensity, localization patterns, and demographic and clinicopathological associations of mutant EGFR protein expression, using exon 19 deletion and L858R point mutation antibodies in NSCLC patients at MNH. **Methods:** This retrospective descriptive cross-sectional study analyzed 99 archived formalin-fixed, paraffin-embedded NSCLC tissue samples diagnosed at MNH between January 2022 and December 2024. Mutation-specific antibodies (MD27R for exon 19 deletion E746-A750 and SP111 for exon 21 L858R) were used for IHC staining. Demographic, histological, and clinical data were retrieved, and staining intensity and localization were recorded. Associations between mutant EGFR protein expression and clinicopathological features were assessed using Fisher's exact tests, with $p < 0.05$ considered significant. Quality control measures included positive and negative controls for each staining run, and all slides were independently reviewed by the principal investigator and supervisors to ensure diagnostic concordance. **Results:** Among 99 NSCLC cases (mean age = 60.2 years; 43.4% aged ≥ 65 years; 56.6% male), adenocarcinoma was most common (66.7%), followed by squamous cell carcinoma (29.3%). Most adenocarcinomas were moderately differentiated (87.9%), while nearly all squamous cell carcinomas were non-keratinizing (96.6%). Mutant EGFR protein expression was detected in 34.3% of cases using two-antibody IHC,

predominantly L858R (34.3%), with DelE746-A750 xiii detected in 3.0%—all co-expressing L858R. Staining intensity was strong in 20.2%, moderate in 14.1%, and weak in 6.1%, with membranous localization most frequent (23.2%). EGFR positivity was highly significantly associated with histological subtype (p = 0.006), occurring mainly in grade 2 adenocarcinomas (88.2%) and non-keratinizing squamous cell carcinomas (94.1%). Although not statistically significant, mutation positivity was more frequent in older patients (≥65 years, 55.9%), slightly more in males (52.9%), and more often in bronchoscopic biopsies (58.8%) than in other specimen types. The unexpected high frequency of L858R in squamous cell carcinoma and its co-expression with exon 19 deletion highlight the diagnostic value of dual-antibody IHC in identifying candidates for targeted therapy. **Conclusion:** Mutant EGFR protein expression, particularly L858R, was common among NSCLC patients at MNH. The two-antibody IHC approach is a feasible alternative to molecular testing for detecting key EGFR mutations. These findings support the inclusion of routine EGFR testing in NSCLC diagnosis to enhance precision oncology in Tanzania. ***Keywords****: EGFR, NSCLC, Immunohistochemistry, Tanzania, L858R, Exon 19 deletion, Mutation-specific antibodies.*

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41. Boniface, S. (2025). Effects of psychosocial factors on late first antenatal care visit in selected health care facilities: A case of Mbeya city council. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Antenatal care (ANC) plays a vital role in early detection and management of pregnancy-related complications, helping to protect maternal and child health. However, many women in low- and middle-income countries, including Tanzania, delay their first ANC visit, contributing to high rates of maternal and neonatal mortality, especially in Sub-Saharan Africa. While various factors have been studied, there is limited information on psychosocial factors and its influence on late initiation of ANC. Broad **Objective:** The study aimed at assessing the influence of psychosocial factors on late first antenatal care (ANC) visit among pregnant women attending selected healthcare facilities in Mbeya City Council, Tanzania. **Methodology:** A cross-sectional study design was employed, enrolled 353 pregnant women aged 15-49 years old attending their first ANC visits in Mbeya CC. Data was gathered using structured questions. Information on participants characteristics, social support, stigma, mental health (anxiety and depression symptoms) and timing of first ANC visit was obtained. Descriptive and inferential analysis was conducted using Stata. Multivariable modified Poisson regression analysis was used to examine the relationship between the socio-demographic, social support, mental health and late first ANC visit. **Results:** The findings showed the proportion of late first ANC visit being 77.1%. after adjusting for confounders, women with perceived social support were significantly less likely to attend ANC late (adjusted prevalence ratio (aPR) = 0.80; 95% CI: 0.79–0.81). Those who experienced perceived stigma had higher prevalence of attending their first ANC late (aPR = 1.16; 95% CI: 1.12-1.21). Depression symptoms (PHQ-9) were linked to a higher prevalence of late first

ANC visit (aPR = 1.22; 95% CI:1.06 – 1.41). Participants who had Anxiety symptoms (GAD-7) had higher prevalence of late first ANC visit (aPR = 1.27; 95% CI: 1.20–1.35). **Conclusion:** The study revealed a high prevalence of late antenatal care initiation among pregnant women, with 77.1% attending their first ANC visit after 12 weeks of gestation, and psychosocial factors being strongly associated with late first visit.

42. Botto, L.N. (2025). Nurses' challenges and opportunities of working in the intensive care unit at Muhimbili Orthopedic Institute, Muhimbili University of Health and Allied Sciences. Muhimbili University of Health and allied since.

Abstract

Background: Intensive Care Units (ICUs) are demanding environments where nurses face high workloads, emotional strain, and resource challenges. While efforts have been made to address these issues in Tanzania, such as specialized training programs and the formation of professional associations, significant stress and burnout persist. There is limited documentation of ICU nurses' experiences concerning the specific challenges and needs within Tanzanian ICUs. Understanding ICU nurses' experiences and the workplace, especially at MOI needs is critical for improving nurses' well-being and patient outcomes. **Aim of the Study:** To explore nurses' challenges and opportunities while caring for patients in the intensive care unit at Muhimbili Orthopedic Institute. **Materials and Methods:** This descriptive qualitative study involved registered ICU nurses at MOI with at least one year of experience. Semi-structured interviews were conducted using purposive sampling in a secure and private setting, with audio recordings made for analysis. Thematic analysis was performed using NVivo software, employing a reflexive thematic approach guided by the socio-ecological model. Furthermore, data was triangulated through audio recordings, field notes, and supervisor feedback to ensure comprehensive analysis. **Results:** Three major themes emerged: workforce management and collaboration, resource and infrastructure adequacy, and leadership and governance. Nurses reported challenges such as inadequate staffing, poor teamwork coordination, outdated equipment, lack of structured rotation policies, insufficient psychological support, and limited involvement in policy decisions. However, opportunities like peer support, mentorship, and personal motivation were noted as buffers against occupational stress. **Conclusion:** Improving the work environment requires deliberate investment in staffing, leadership, infrastructure, and nurse-centered support systems. Leadership practices must emphasize transparency, accountability, and staff inclusion in decision-making. Formal psychological support services and motivation mechanisms should also be integrated to enhance the overall well-being and retention of ICU nurses. Moreover, the findings and recommendations from this study extend beyond MOI and hold significant relevance for other orthopedic ICUs across low- and middle-income countries (LMICs), where similar structural and human resource constraints affect the quality of critical care delivery.

43. Bukoli, B.L. (2025). To evaluate the effectiveness of modified ultrafiltration on postoperative outcomes in children undergoing open heart surgery at the Jakaya Kikwete Cardiac Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cardiopulmonary bypass is an important procedure in Cardiac surgery. In this procedure, blood is bypassed around the heart and lungs and then rerouted outside the body to provide extracorporeal life support. Despite its importance during cardiac surgery, its use is associated with several complications. Different ultrafiltration techniques were introduced to counteract the complications of cardiopulmonary bypass and improve postoperative outcomes. Conventional Ultrafiltration was introduced to eliminate surplus fluid and solutes with low molecular weight during bypass. Naik and colleagues introduced Modified Ultrafiltration in 1991 as an additional practice to effectively remove excess water and inflammatory mediators. Various studies have been conducted to investigate the effectiveness of Modified Ultrafiltration in improving clinical outcomes. The superiority of these ultrafiltration methods remains debatable. **Aim:** This study planned to evaluate the effectiveness of modified Ultrafiltration on postoperative outcomes in children undergoing open heart surgery at the Jakaya Kikwete Cardiac Institute. **Materials and methods:** This prospective comparative cross-sectional study was performed in 52 children who underwent cardiac surgeries under cardiopulmonary bypass from March 2025 to May 2025 at JKCI. Data were collected using a standard observational checklist modified by a researcher, and analysis was performed using SPSS software version 27. Perioperative data were calculated prospectively and expressed as mean ± standard deviation. General linear trend analysis was performed for continuous serial values in the same group, whereas inter-group comparison was done using a t-test. A p-value < 0.05 was considered statistically significant. **Results:** Out of 52 participants, 26 were in CUF+MUF, where 18 were males and eight female participants, with a Mean age of 1.73±1.28 years and a Mean weight of 8.51±3.57 kg. In the CUF group, there were 13 male and 13 female participants, with a Mean age of 1.95±1.62 years and a Mean weight of 9.03±6.09 kg. Both groups were similar in terms of preoperative diagnoses and surgical procedures. No differences were found for CPB time, cross-clamp time, and priming volume. In postoperative comparison, there was a significant increase in Hematocrit in the CUF+MUF group compared to CUF (p=0.000), MUF shortened mechanical ventilation time (p=0.019), and length of ICU stay (p=0.02)—no differences between groups in hemodynamic parameters and mortality rate. **Conclusion and recommendation:** Modified Ultrafiltration improves Hematocrit, contributes to the reduction of blood transfusion need, shortens mechanical ventilation time, and length of ICU stay in children undergoing open heart surgery over CUF. We recommend the use of MUF in children undergoing open heart surgery. The institution should provide clear guidelines and protocols for the routine use of MUF and establish regular audits and monitoring of outcomes to evaluate the safety of MUF and identify areas for continuous improvement.

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44. Bundala, J. (2025). Experiences of Women Who Had Waterbirth in Postnatal Wards in Dar Es Salaam Region. Muhimbili University of Health and Allied Sciences. Muhimbili university of health and Allied Sciences.

Abstract

Background: Waterbirth, a practice involving labour and delivery in warm water, is growing in popularity worldwide for its potential to reduce pain and increase comfort. In Tanzania, specifically in Dar es Salaam, women increasingly explore and choose waterbirth as a birthing

method. Despite this growing interest, data on qualitative research into the lived experiences of these women are scarce. **Aim of the study:** This study explored the experience of women who had waterbirth in the Dar es Salaam Region. **Materials and Methods:** A phenomenological qualitative approach was conducted from 2nd April 2025 to 30th May 2025, involving in-depth interviews with 21 informants (postnatal women) who were purposefully selected, achieving data saturation at 13 informants. Data were transcribed verbatim, coded, and analyzed using thematic analysis; sub-themes and main themes were generated. **Results:** Three main themes emerged from decision-making to post-delivery. First, Drivers for maternal decision-making, which involved both internal and external factors that contributed to women`s decision to give birth by water. Second, the nurturing and positive waterbirth experience describes how waterbirth promoted satisfaction. The final section, positive outcomes and persistent challenges, revealed that although women were extremely satisfied and became advocates for waterbirth, they continuously encountered barriers that restricted the accessibility and availability of waterbirth services. **Conclusion:** The study found that Women have a higher level of satisfaction with water birth. However, external barriers regularly impede its uptake and access. It is important to address these barriers to enhance access to waterbirth services.

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45. Bwenda, J.S. (2025). Assessment of Outpatient Data Quality in Terms of Completeness and Accuracy in Electronic Medical Records in Selected Public and Private Health Facilities in Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Data quality remains a critical concern in the health sector. Globally, the shift from paper-based to electronic medical record (EMR) systems has been key to improving data reliability. In Tanzania, several EMR systems are in use, including the Government of Tanzania Health Management Information System (GoT-HoMIS) under PO-RALG and the electronic Health Management System (eHMS) under the Ministry of Health for public facilities. Private facilities use various other EMRs. While these systems enhance data collection and service delivery, continuous efforts are needed to strengthen data quality particularly in terms of completeness and accuracy. **Objectives:** This study aims to assess the quality of outpatient data captured by electronic medical record systems in the selected public and private health facilities in Dar es Salaam between July 2024 and December 2024. **Methodology:** A cross-sectional study design was employed, whereby both qualitative and quantitative methods of data collection were used. Quantitative data were collected from outpatients' digital records in four health facilities between July 2024 and December 2024 using a structured data quality assessment tool derived from national Data Quality Assessment (DQA) guidelines. The sample size was 888 drawn from four (4) hospitals in the quantitative data, while the qualitative data involved 16 healthcare workers. Simple random sampling had been used to select outpatient digital records. Descriptive statistics were used to analyse the quantitative data using Stata version 18.0 software, while thematic analysis was used for the qualitative data. **Results:** Data completeness across all facilities averaged 58%, while accuracy averaged 53%, both classified as "Needs Improvement" by DQA standards. Demographic fields showed high completeness (ID 99.9%, last name 99.8%, sex 98.7%, age 99.3%), but clinical details especially treatment (44.5%), laboratory results (39.9%), height

(30.0%), and weight (20.2%) were substantially incomplete or inaccurate. Private EMRs performed slightly better than public systems in completeness (83.5% vs. 73.0%) and accuracy (67.5% vs. 46.5%), though differences were not statistically significant. Four thematic domains influenced data quality: individual vi factors (digital literacy, attitudes), technical factors (interface usability, downtimes, system efficiency), organizational factors (training, staffing, power reliability), and data-specific issues (non-mandatory fields, data entry behaviours). **Conclusion:** This study concludes that EMR systems in Tanzania plays significant role in data capturing processes, however, substantial gaps in data accuracy persist especially in public health facilities. A unified approach to EMR design, mandatory field enforcement, capacity building for staff, and infrastructure strengthening are necessary to enhance data quality.

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46. Bwikizo, S.S. (2025). Determinants of prompt healthcare-seeking behavior among mothers of under-five children with diarrhea illness in Shinyanga District Council in Shinyanga Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Diarrhea disease among under-five children is a public health concern. Prompt health seeking among mothers for those under five children with diarrhea is still a challenge, leading to increased severe health consequences, morbidity, and mortality to children under five. **Broad objective:** To determine the factors associated with prompt healthcare-seeking behavior among mothers of children under five for diarrhea illness in Shinyanga District Council (DC) in Shinyanga Region. **Materials & methods:** This was an analytical cross-sectional study using a quantitative approach that was conducted in Shinyanga DC. A four multistage sampling was used to obtain 373 representative mothers of children under five for diarrhea illness. An interviewer-administered questionnaire with closed-ended questions was used as a tool for data collection. Data were analyzed using STATA software, and descriptive statistics, bivariate, and multivariable analyses were performed. **Results:** The proportion of healthcare-seeking behavior for mothers of under five children with diarrhea was 25.5%. For individual level determinants: having university education (adjusted odds ratio (AOR) = 4.29; 95% CI: 1.23–14.94; p = 0.022), higher income earning 400,000 TZS and above (AOR = 1.89; 95% CI: 1.11–3.23; p = 0.019). Social cultural determinates: Being aware of danger signs had nearly twice the odds of seeking prompt care (AOR = 1.86; 95% CI: 1.34–2.58; p-value < 0.001), as did those with support from their partners (AOR=7.50; 95% CI: 2.40–8.50; p<0.001) Health system factors: High transportation costs independently reduced the likelihood of prompt care by more than half (AOR = 0.42; 95% CI: 0.29–0.61; p < 0.001), also, long time spent at HCF (AOR=0.30; 95% CI: 0.10–0.70; p=0.006).**Conclusion:** The prevalence of prompt healthcare seeking behavior among mothers of under five children with diarrhea illness in Shinyanga DC was found to be low. Several determinants were found to be significantly associated with it**.** Addressing those determinants by community members and healthcare providers at the center of implementation might contribute to improved healthcare seeking behavior outcome.

47. Bwimba, J. (2025). Cost analysis of implementing mass drug administration for schistosomiasis control among adult community members in Ukerewe district council, north-western Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Schistosomiasis remains a significant public health challenge in Sub-Saharan Africa, with Tanzania having the second-highest disease burden. While mass drug administration (MDA) with praziquantel is effective, high-risk groups especially those living in remote rural areas are often excluded. The Ukerewe Schistosomiasis Control Program aims to expand MDA coverage, promote health education, and engage community-driven efforts to reduce disease prevalence in Ukerewe island in Lake Victoria, Tanzania. **Objective:** To analyze the costs of implementing the first phase of Schistosomiasis Control Program among the adult population in Ukerewe Island, Tanzania. **Methods:** A descriptive cross-sectional study was conducted from a provider's perspective, employing an ingredient-based costing approach to identify, quantify, and value all inputs used in implementing the MDA. The analysis covered 30 villages and approximately 150,000 individuals. Secondary data were collected from financial records, inventory and transportation logs, and project budgets. Costs were categorized as capital or recurrent, with capital costs annualized using a 3% discount rate. All values were inflation-adjusted to 2025 prices, and analysis was performed using Microsoft Excel. **Results:** From 2021 to 2025, the program reached 310,807 individuals, surpassing its initial target. The total cost of implementation was TZS 966,825,394 (USD 369,638), resulting in an average unit cost of TZS 3,111 per person treated. The largest cost share (69.6%) was attributed to drug distribution and treatment, followed by training, sensitization, and monitoring activities. Recurrent costs primarily for medicines and personnel accounted for 96.7% of total expenditure. Cost projections through 2030 indicate that while total MDA costs will rise with population coverage, the unit cost is expected to decline, signaling improved cost-efficiency with program scale-up. **Conclusion:** The Ukerewe MDA program provides strong evidence that large-scale, cost-effective schistosomiasis treatment is achievable with robust planning. Future program efficiency can be further enhanced through improved supply chain systems, bulk procurement, and consideration of lower-cost praziquantel biosimilars, offering a scalable model for schistosomiasis control in other high-burden regions.

48. Byonge, D. (2025). Prevalence and Factors Associated with High Atherosclerotic Cardiovascular Disease Risk Among Haemodialysis Patients in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Atherosclerotic cardiovascular disease is the leading cause of morbidity and mortality among patients with end-stage renal disease; however, the independent contribution of renal failure is unknown. The risk prediction models, such as the Pooled Cohort Equations (PCE), have been widely used in the general population to estimate the likelihood of developing a first-time atherosclerotic cardiovascular disease (coronary, cerebrovascular and peripheral heart diseases) within a 10-year period. However, their applicability in ESRD patients has been a subject

of debate due to the specific metabolic and hemodynamic changes that happens in this population. **Objective:** This study aimed at assessing the prevalence and associated factors for a high 10-year atherosclerotic cardiovascular disease risk, among patients with end stage renal disease undergoing hemodialysis in Dar es salaam Tanzania. **Material and Methods:** The study employed analytical cross-sectional study design with quantitative approach, which involved 196 patients from two hospitals, Muhimbili National Hospital and Aga Khan Hospital Dar es salaam. The 10-year atherosclerotic cardiovascular disease risk was calculated using the atherosclerotic cardiovascular disease risk calculator, the risk estimator plus. The overall 10-year atherosclerotic cardiovascular disease risk percentages were categorized into low percentage (10-year ASCVD risk compared to those on dialysis for 3–6 months (AOR=3.57; 95% CI: 2.51 4.62). Moreover, participants with comorbidities were 2.41 times more likely to have high 10-year ASCVD risk compared to those without comorbidities (p = 0.001). Among the specific comorbidities, hypertension emerged as a significant predictor, with individuals diagnosed with hypertension being 21.35 times more likely to have high 10-year ASCVD risk (AOR=21.35; 95% CI: 18.29–24.41, p = 0.001). **Conclusion and recommendations:** The study revealed a high burden of high 10-year ASCVD risk among ESRD patients undergoing HD, with older age, male gender, longer dialysis duration and presence of comorbidities being independent key predictors. These findings highlight the urgent need for integrating atherosclerotic cardiovascular disease risk screening into routine dialysis care.

49. Carlos, B. (2025). Clinical profile and factors associated with early onset of colorectal cancer among patients treated at Muhimbili National Hospital and Ocean Road Cancer Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Colorectal cancer (CRC) has been regarded as a condition predominantly impacting older populations but recent evidence shows a growing burden among individuals under 50 years, termed early-onset colorectal cancer (EOCRC)[(1)(2)]. Information on its clinical profile and associated factors in Tanzania is limited. **Main objective:** to determine the clinical profile and factors associated with early-onset colorectal cancer in patients under 50 years of age treated at MNH and ORCI. **Methodology:** A retrospective case-control study of 214 CRC patients treated between 2019–2024 was conducted. EOCRC was defined as CRC diagnosed before age 50. Multivariable logistic regression was applied to identify factors associated with EOCRC. Results**:** Of 214 patients, 54 (25.2%) had EOCRC. Compared with late-onset CRC (LOCRC), EOCRC patients more frequently presented with abdominal pain (68.5% vs. 48.1%, p = 0.009) and advanced disease stages (III/IV: 85.2% vs. 50.6%, p < 0.001). Alcohol consumption was also more common in EOCRC cases (37.0% vs. 16.3%, p = 0.007). On multivariable analysis, alcohol use (AOR 0.66; 95% CI: 0.13–0.70; p = 0.005), abdominal pain (AOR 0.82; 95% CI: 0.21–0.86; p = 0.017), and change in bowel habits (AOR 1.13; 95% CI: 0.22–0.93; p = 0.030) remained independently associated with EOCRC. Tumor location showed a borderline association with distal sites (p = 0.052). **Conclusion:** EOCRC accounted for one-quarter of CRC cases in this cohort. Abdominal pain and bowel habit changes were frequent and significant features at

presentation. Alcohol use was significantly associated with EOCRC, though details on type, duration, and quantity were not captured. Most EOCRC patients were diagnosed at advanced stages, reflecting delayed recognition and aggressive disease biology, consistent with global trends. These findings highlight the need for greater clinical vigilance, earlier suspicion in younger patients, and context-specific prevention strategies in Tanzania.

50. Chaba, D. G. (2025). Evaluating The Implementation of Maternal and Perinatal Death Surveillance and Response (Mpdsr) Guideline in Simiyu Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Preventable Maternal and Perinatal deaths are serious, undesirable events distressing the health systems worldwide. In 2016, the World Health Organization (WHO) recommended all countries ratify and incorporate the Maternal and Perinatal Deaths Surveillance (MPDSR) system to accelerate the reduction of preventable maternal and perinatal deaths. The national (MPDSR) guideline was revised in 2019 to align the country efforts and speed to towards achieving reduction of maternal and perinatal deaths in the recommended pathway under the Sustainable Development Goal Na3. **Objectives:** This study evaluates the implementation of MPDSR process in Simiyu Region, Tanzania, by describing facility level implementation status, identifying barriers and facilitators to effective implementation, and assessing data use to improve maternal and newborn health outcomes. **Methodology:** A qualitative process evaluation was conducted to explore the lived experiences and implementation dynamics of MPDSR among implementers in Simiyu Region. The study targeted: (1) health facilities with active MPDSR activities, defined as those submitting maternal and perinatal death reports over the past 12 months, and (2) MPDSR committee members, including Medical Officers in Charge, Nurses, and Reproductive and Child Health Coordinators. Data were collected through 30 key informant interviews (KIIs), 6 focus group discussions (FGDs), and a qualitative review of MPDSR implementation reports and documents. Key findings were generated through thematic content analysis, utilizing Excel and NVivo software, identifying themes related to implementation fidelity, barriers, and data utilization. **Results:** MPDSR in Simiyu region features multidisciplinary teams, guideline driven audits and SMART action plans, supported by council revenue and community linkages, with higher fidelity at Meatu and Bariadi District Hospitals but irregular meetings at Burundi Heath Centre. Barriers and facilitators to effective implementation are staff shortages, fear of blame, resource constraints (Blood, equipment) cultural beliefs (witchcraft among Wataturu), and inefficient HMIS undermine fidelity and adoption, particularly at lower-level facilities. Data use MPDSR data targeted training, community campaigns, and resource allocation such as (ambulance), but incomplete data limit extensibility, especially at Bukundi Health Centre. **Conclusion and Recommendations**: MPDSR implementation align with 2019 national guidelines but faces barriers reducing fidelity and adoption. CHMTs and facility in charges should enforce regular meetings (Inner settings). Ministry of Health and NGOs should fund resources (outer settings). RHMTs should train to reduce blame culture (individuals). Intervention characteristics health technical staff should upgrade HMIS to enhance outcomes.

51. Chacha, W. (2025). Socio-cultural factors influencing iron deficiency anemia among pregnant women: A case of pastoralist community in Simanjiro district Manyara. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Iron deficiency anemia (IDA) remains a public health issue that affects more than 56% pregnant women nationally in Tanzania. IDA during pregnancy is intense, as it can lead to complications such as preterm delivery, low birth weight, and increased maternal morbidity and mortality. Despite its well-known impact, there has been little research into how social and cultural factors influence its prevalence during pregnancy. This study looked into these contextual factors among pregnant women in Simanjiro District. **Objective of the study**: To explore the socio-cultural factors influencing iron deficiency anemia among pregnant women in the pastoralist community of Simanjiro District, Tanzania **Material and Methods**: A qualitative exploratory case study design was employed, utilizing In-depth interviews. The study purposively included 15 pregnant women attending the ANC clinic at two health facilities with high ANC visits in Simanjiro District. An interview guide was used to collect information among pregnant women. Thematic analysis was used to identify, analyze and report themes within the data. **Findings:** Main themes identified included restrictions on certain foods due to cultural beliefs, such as the avoidance of eggs, liver, and milk based on concerns about fetal growth. Decision-making within households, minimal involvement of male partners, dependence on traditional healing practices, and financial limitations. These factors collectively hinder sufficient iron consumption and consistent attendance at antenatal care services. Participants addressing anemia varied widely and were largely influenced by cultural traditions. **Conclusion and recommendation:** Iron Deficiency Anemia (IDA) among pregnant women in Simanjiro is deeply rooted by many factors, including gender inequity, cultural food taboos, a lack of male engagement, and limited access to healthcare, which causes inadequate iron consumption during pregnancy. It is recommended to promote Nutrition education within the community, challenge harmful food Taboos and Beliefs and involve men in maternal Health and Nutrition.

52. Chalya, G. (2025). Sedation-related adverse events and associated factors among patients undergoing gastrointestinal endoscopy at Muhimbili National Hospital, Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sedation remains an important and useful anaesthetic procedure in clinical practice especially in medical or surgical procedures. It provides a state of calmness, relaxation, sleepiness, relieves anxiety during procedures and helps patients and health care providers cope with stressful events. Gastrointestinal (GI) endoscopy is among the procedures which require sedation for the investigation of GI symptoms, allowing direct mucosal visualization, tissue acquisition and when required, therapeutic interventions. However, considerable variations in sedation practices have been reported among patients undergoing GI endoscopy. Limited studies have been conducted to assess the sedation practices among patients undergoing GI endoscopy in Tanzania. Despite its clinical usefulness, sedation has been shown to be associated with adverse events. Adverse events

may vary between populations and settings based on the type and dose of medication used, route of administration, age, gender, pre-existing medical condition and duration of procedure. Most of the studies done to assess adverse events were conducted in developing? countries, leaving a knowledge gap on the nature, pattern, severity and risk factors of adverse events in resource-limited settings including Tanzania. **Aim of the study:** To assess sedation practices, adverse events and associated factors among patients undergoing GI endoscopy at Muhimbili National Hospital-Dar es Salaam, Tanzania Methodology A hospital-based analytical cross-sectional study was conducted among 272 patients who underwent GI endoscopy at the East Africa Gastroenterology and Hepatology center at MNH, Dar es Salaam, Tanzania. A pre-tested structured questionnaire was used to collectdata such as sociodemographics, type of sedative agent, dose, route of administration, duration of procedure, administering personnel, monitoring, use of sedation protocol and observed adverse events. Binary logistic regression was used to assess for the predictors of adverse events following sedation. Data was analyzed using SPSS version 23. **Results:** A total of 272 patients who underwent sedation for GI endoscopy were enrolled into this study. The median age of the study population was 50 years (IQR 33, 62) and males accounted for the majority of the study participants (57.0%). The prevalence of the adverse events observed in this study was 61.0%. The common adverse events observed in this study were desaturation (58.4%) followed by hypotension (43.4%) and vomiting (9.4%). Regarding sedation practices, only 13.0% (3/23) of the sedation providers used a sedation assessmenttool when giving sedationand 21.7% (5/23) of the providers had received training on using sedation assessment tool. About 91.3% (21/23) of the sedation providers preferred to use propofol as a sedative agent. Majority of the sedation providers preferred a moderate level of sedation 21/23 (91.3%). On multivariable analysis, young age. **Conclusions:** This study observed a high prevalence of the adverse events following sedation notably oxygen desaturation, hypotension and vomiting. The findings provide valuable insights on sedation practice and the identification of significant predictors of adverse events could be utilized as an opportunity for improvement to enhance the safety and quality of care for patients undergoing sedation procedures.

53. Chambali, R.A. (2025). Lived experience of women with peripartum cardiomyopathy attending clinic at Jakaya Kikwete cardiac institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Peripartum cardiomyopathy presents with symptoms similar to physiological changes of pregnancy hence making its early detection a challenge, Understanding the lived experience of these women is essential in the proper management of these women as there is involvement of multiple specialties but also the emerging of cardiac diseases in Tanzania hence would aid in the proper incorporation of their care for future patients, the desire to reduce maternal death. **Objective:** The study explored lived experience of women with peripartum cardiomyopathy attending clinic at Jakaya Kikwete cardiac Institute. **Methodology:** A phenomenological explorative qualitative study focusing on the lived experiences of women with PPCM attending

clinic at Jakaya Kikwete Cardiac Institute (JKCI). Purposive sampling techniques were used, guided by information saturation. Twelve in-depth interviews were conducted using a Swahili guide, and audio recordings were transcribed verbatim. An inductive-deductive Thematic analysis as proposed by Braun and Clark has been used to guide the data analysis phase. **Results:** Study uncovered there is symptoms dismissal by health care providers, good adherence to medication brings out good recovery outcomes, there is society misconceptions on cardiac disease good health care support brings good overall outcome to patients but also having trust and being grateful to God is how these women survive past PPCM. **Conclusion:** The lived experiences of mothers living with PPCM cut across both physical, social and psychological and these not only affect them as living with PPCM but also their families and loved ones. The findings from this study broaden our understanding of the hardship and personal suffering in women experiencing PPCM, and shows that a delayed diagnosis of PPCM may have great impact on women's daily life and health.

54. Chambega, C. M. (2025). clinical-pathological profile and outcome of children with primary brain tumours managed at a tertiary hospital in Tanzania: a five-year review. Muhimbili university of health and Allied Sciences.

Abstract

Background: Brain tumours in children are the second most prevalent type of childhood cancer after hematological malignancies. Globally, an estimated 30,000 new cases of brain tumours are observed yearly. Compared to the 1980s and 1990s, the 5-year survival rate has improved by up to 70%; this improvement has primarily been observed in high-income countries. Less than 50% of patients in low- and middle-income countries (LMIC) survive, with little known about the survival in Tanzania, and the clinical profile of children with primary brain tumours. Over the past ten years, Muhimbili National Hospital (MNH) and Muhimbili Orthopedic Institute (MOI) have been involved in the management of childhood brain tumours. **Objective:** To determine the clinical-pathological profile and outcome of children with primary brain tumours managed at MNH and MOI. Methodology: This was a hospital-based am bidirectional cohort study conducted from 2017 to 2021. Patients aged 18 years and below with primary brain tumours were identified, and data were collected from their medical records. Follow-up was done via phone calls to the patient's guardians (after obtaining verbal consent) and during outpatient paediatric oncology clinic visits and survivorship clinics. **Results:** Seventy-four children were included. The most common presenting symptom was headache (63.5%), and the median duration of symptoms was 5 months. The leading tumour diagnoses were astrocytomas (23%), brainstem tumours (23%), and medulloblastomas (18%). Partial resection was performed in 62% of the patients. Postoperative complications occurred in 38% of the cases, and the 30-day postoperative mortality rate was 18.5%. The overall 1-year and 2-year survival rates were 52.0% and 37.8%, respectively, with a median survival time of 13.83 months. Astrocytomas and female sex were associated with better

survival, while brainstem tumours had the poorest prognosis. **Conclusion:** Survival outcomes of children with brain tumours remain poor in this setting, largely due to late presentation, limited access to multimodal care, and perioperative risk. There is an urgent need to strengthen early diagnosis, neurosurgical capacity, and multidisciplinary oncology services to improve outcomes.

55. Chamdimba, G. (2025). Nurses and doctors' experiences in the Management of Acute Kidney Injury at Mzuzu Central Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Acute Kidney Injury presents a substantial global health burden, with Africa and other developing countries disproportionately affected. AKI in developing countries results from potentially preventable and treatable causes. Despite being key players in AKI management, healthcare workers often lack the knowledge, skills, and resources to manage AKI effectively which leads to substandard care. This study explored the experiences of nurses and doctors in managing AKI at MZCH. **Materials and methods:** A descriptive qualitative study was conducted among nurses and doctors in the ICU, medical, and paediatric departments. Purposive sampling was used to select study participants. Fifteen in-depth interviews were conducted, using a semistructured interview guide. Each interview was audio recorded. Thematic analysis with a both inductive and deductive approach guided by Braun and Clark's six steps of analysis was employed to analyze the data. **Results:** Four themes and thirteen associated subthemes emerged from the data. Key themes were practices in the management of AKI, which had four subthemes, namely: Identification of at-risk patients, prevention of AKI, early diagnosis of acute kidney injury, and interventions carried out for AKI patients. The second theme was facilitators of care; under this theme, three subthemes emerged: Personal attributes, effective interprofessional collaboration, and institutional support. The third theme was barriers to care, which had the following subthemes: deficiencies in training, challenges in the multidisciplinary collaboration, systemic resource and infrastructural challenges. Strategies to improve experiences and management of AKI was the last theme with three subthemes: fostering a learning culture, strengthening multidisciplinary collaboration, and enhancing infrastructure, resources, and standardized practices. **Conclusion:** Acute kidney injury is a potentially preventable and treatable condition with early intervention. This study has highlighted knowledge and practice gaps, as well as important care facilitators and barriers. These findings are useful in developing training curricula for clinical personnel and strategies to improve management of patients with AKI. Deliberate efforts and investments should therefore be made to ensure proper patient management.

56. Chana, G. (2025). Prevalence and factors associated with treatment adherence among young adults (18-30 years) with hypertension at Jakaya Kikwete Cardiac Institute, Dar es aam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hypertension is the leading cause of cardiovascular disease and death. Globally, it affects 1.13 billion people per year, where 40% of it occurring in Sub-Saharan Africa. In Tanzania,

hypertension increases the risk of cardiovascular disease by 25.9%. The problem of hypertension is increasing in young adults by 20% in occurrence, with the prevalence of 29.9% adherence to treatment. Treatment adherence is a big challenge among this population group in developing countries, especially Tanzania, due to peer pressure, career demands, sexual relationships, family relationships, and stress. Despite the availability of specialized hospitals in rural and urban areas, it is not certain why hypertension is still not manageable in young adult patients. **Objective:** This study aimed to determine the prevalence and factors associated with adherence to treatments among young adult patients with hypertension. **Materials and Methods:** The cross-sectional study was conducted at the Jakaya Kikwete Cardiac Institute Outpatient Clinic, Dar es Salaam. This study recruited 360 young adults with hypertension using a simple random sampling technique. The data were collected using a questionnaire. Data entry and analysis were handled using a statistical package for social science (SPSS) version 27. The data analysis and interpretation involved descriptive measures such as frequencies, means, and percentages, tables, and figures to conclude and present results. The chi-square test was used to determine the association of factors that influence adherence to treatments with a significance level of $P<0.05$. Also, Bivariate and Multivariate regression models were used to determine the statistical association between dependent and independent variables. **Results**: The total number of participants in the study was 360. The age range was 18 to 30 years, with a mean age of 26 years (SD±2.9years). The prevalence of treatment adherence was 36.9% among the participants, with 71.7% (258) had limited adherence to physical activities. Adherence to medication was 34.2% (123) while effective control of dietary salt and weight management were 87.2% (314) and 86.1% (310) respectively. Participants who were not physically active had lower odds of adherence (AOR = 0.000, 95% CI: 0.000–0.006, P< 0.001) and those with poor weight management were significantly less likely to adhere on treatments (AOR = 0.001, 95% CI: 0.000–0.033, P<0.001). Individuals who consumed alcohol had a significant lower likelihood of treatment adherence (AOR = 0.012, 95% CI: 0.001–0.286, p = 0.006). Other factors such as smoking, stress, BMI category, social support, and low salt dietary practices were not significantly associated with adherence. **Conclusion:** The findings underscore the importance of improving health promotions on lifestyle modifications such as physical exercises and low dietary salt amongst young adults with HTN to enhance continuum care. Furthermore, daily tracing of medication adherence should be addressed to ensure the proper uptake of medications among young adults.

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57. Charles, A. (2025). Experiences with cardiovascular **healthcare services among heart failure patients during the transitional care period at Jakaya Kikwete Cardiac Institute in Dar es Salaam, Tanzania. Muhimbili university of health and Allied Sciences.**

Abstract

Background: Heart failure (HF) is a complex clinical syndrome characterized by the inability of the heart to pump sufficient blood to meet the body's demands, leading to symptoms such as fatigue, shortness of breath, and fluid retention. It causes high mortality, morbidity, and readmission rates as well as a high economic burden to patients and healthcare systems globally; therefore, it needs special attention to address it through strengthening the cardiovascular healthcare services during the transitional care period. **Aim of the study:** The study aimed to

explore patients' experiences with cardiovascular healthcare services and factors predicting readmission among heart failure patients during the transitional care period at JKCI in Dar es Salaam. **Methodology:** This study employed a qualitative study design. It focused on in-depth interviews by using a semi-structured interview guide with open-ended questions to gather rich, nuanced insights from the fourteen (14) participants selected using a purposive sampling method. The selected participants signed a consent form to participate, and a time for the interview was planned. Moreover, thematic analysis was utilized for data analysis. Results: In-depth interviews with fourteen (14) heart failure patients were conducted, of which eight (8) participants were females and six (6) were males. Four (4) major themes emerged with thirteen (13) sub-themes. The major themes are; 1. Challenges in accessing cardiovascular healthcare services, 2. Appreciated of cardiovascular healthcare services 3. Demand for economic and psychosocial support, 4. Reasons to frequent readmission have been elaborated in detail and supported with verbatim quotes. **Conclusion:** The study's findings have highlighted critical gaps in accessing and utilizing cardiovascular healthcare services of HF patients; hence, the government, policy makers, and healthcare providers have to accept them and take necessary steps to ensure availability of affordable cardiovascular healthcare services during the transitional care period at JKCI.**Keywords:** Heart failure, Transitional care period, cardiovascular healthcare services

58. Charles, A. (2025). Maternal And Fetal Outcomes of Pregnancy with One Previous Cesarean Scar at Selected Cemonc Health Facilities in Kongwa District. Muhimbili University of Health and Allied Sciences.

Abstract

Background: There is a notable concern surrounding the escalating rates of cesarean sections on a global scale. Pregnancies with one previous scar give a dilemma for obstetricians and pregnant mothers to decide either trial of labor after Cesarina section or plan for elective repeat cesarian section. Both of these have their risks and benefits in different settings. Studies outside Tanzania in facilities in primary health care have shown higher maternal and perinatal morbidities and mortalities due to delayed access to health care and gapes in quality of obstetric care. However, there is lack data about maternal and fetal outcomes of this high-risk population in Tanzania. **Objective;** The study intended to determine the outcomes of pregnancy with one previous uterine scar in Kongwa District Council. **Methods;** A cross-sectional study was done at different levels of health facility settings and included pregnant women with one uterine scar who were admitted and delivered between 1st January 2021 to 31st July 2024 at Kongwa District council. Patient registration numbers were extracted from ANC and postnatal wards, ward rounds books, a Paper-based Health Management Information System, a database from an electronic-based Health Information system, and record books in the theatre. Files were obtained from medical records. Data was collected using a structured questionnaire (Software based-kobo tool) that included social demographic characteristics, maternal outcomes and fetal outcomes. **Results:** Among 14,962 deliveries in four health facilities, 5,348 (36%) were cesarean sections. Of 326 women with a previous uterine scar, 74 (32%) achieved unplanned VBAC, primarily as emergency referrals from lower-level facilities or home without prior antenatal counselling. The majority (158 women, 68%) underwent emergency cesarean sections, compared to 94 (29%) who had elective repeat

cesarean sections (ERCS). Maternal and fetal complications occurred more prevalent in emergency cesarean cases following failed vaginal delivery attempts than in ERCS cases. The study recorded two maternal deaths. **Conclusion:** The majority of maternal and fetal complications in women with a prior cesarean scar occurred when there was a failed trial of labor and late presentation in the labor ward, a situation frequently compounded by a lack of adequate antenatal counselling. This pathway of delayed care leads to significantly worse outcomes than the planned pathways of elective repeat cesarean section or a closely monitored trial of labor. **Keywords:** One previous uterine scar, VBAC, Elective Repeat Cesarean section.

59. Charles, H. (2025). Prevalence and associated factors for Mycobacterium tuberculosis culture contamination among sputum samples referred at Mbeya Zonal Referral Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Introduction: Tuberculosis (TB) remains a major global health threat, with rising incidence despite intensified control efforts. Accurate diagnosis is essential for effective treatment and prevention, with mycobacterial culture serving as the gold standard diagnostic method. However, culture contamination caused by non-target microbes continues to challenge timely use of culture. Contamination rates exceeding WHO-recommended thresholds compromise result reliability and delay patient care. Understanding factors contributing to culture contamination is therefore crucial for improving laboratory performance and TB control outcomes. **Broad objective:** This study determined the prevalence and associated factors for Mycobacterium tuberculosis culture contamination among sputum samples referred at Mbeya Zonal Referral Hospital (MZRH). **Methodology:** A laboratory-based cross-sectional study was conducted at MZRH laboratory from August to December 2024. Mycobacterium tuberculosis culture contamination was identified by observable color changes in the culture media and the presence of non-Mycobacterium tuberculosis growth. Descriptive statistics such as proportions were used to summarize categorical variables. Chi-square tests were employed to assess associations between categorical variables. Factors associated with Mycobacterium tuberculosis culture contamination, including transportation time, storage conditions, smear results, and sputum quality, were analyzed using univariate and multivariate logistic regression analysis. A p-value of <0.05 was considered statistically significant. Results: A total of 330 sputum samples were analyzed, with the majority collected from males 73% (n = 241) and newly diagnosed TB cases 65.8% (n = 217). The overall culture contamination rate was 14.2% (n = 47). Multivariate analysis revealed that contamination was significantly associated with transport time exceeding three days (aOR = 4.66; 95% CI: 2.13–10.20; p < 0.001) and salivary sputum samples (aOR = 3.08; 95% CI: 1.49–6.35; p = 0.002). Additionally, smear-negativity showed a marginal association with MTB culture contamination in the univariate analysis (cOR = 1.88; 95% CI: 0.76–4.63; p = 0.171), and this marginal association persisted in the multivariate analysis (aOR = 2.63; 95% CI: 1.02–6.77; p = 0.045). Conversely, storage conditions did not show a significant association with Mycobacterium tuberculosis culture contamination. **Conclusion:** This study observed a high contamination rate in Mycobacterium tuberculosis culture. Delayed transportation (more than three days) and salivary sputum samples were independently associated with an increased risk of contamination.

60. Charles, M. S. (2025). Drivers of voluntary medical male circumcision uptake among adult males 15-49 years in Bariad District Council, Tanzania. Muhimbili university of health and Allied Sciences,

Abstract

Background: Voluntary Medical Male Circumcision (VMMC) is a surgical procedure performed under anesthesia by trained medical personnel and has been endorsed by WHO and UNAIDS as an effective HIV prevention strategy in high-burden countries. This endorsement has led to increased efforts by governments and NGOs to promote its uptake. However, in traditionally non-circumcising communities, a significant gap remains between circumcised and uncircumcised adult men. Therefore, it is essential to explore the drivers for VMMC uptake in these community to enhance the integration of VMMC programs into HIV prevention efforts. **Objective:** To explore drivers of Voluntary Medical Male Circumcision Uptake Among Adult Male 15-49 years in Bariadi District Council, Tanzania. Methodology: The study used a qualitative case study in Bariadi District, Tanzania, involving purposively sampled men aged 15–49 through in-depth and key informant interviews. Data were analyzed with NVivo using content analysis to identify factors influencing VMMC uptake. **Results:** Results revealed that facilitators included awareness of VMMC's health benefits, personal autonomy, community support, positive healthcare provider attitudes, and reliable service availability. Conversely, barriers such as fear and misconceptions, concerns about healing and daily responsibilities, doubts about provider competence, staff shortages, and lack of age-sensitive service delivery. **Conclusion:** The study concludes that successful VMMC programs require empowering men with accurate information and supportive social environments while also strengthening health service delivery. Recommendation: To increase VMMC uptake, programs should focus on community mobilization, peer advocacy, clear education, and respectful provider training. Sustainable implementation requires age-sensitive services and strong coordination among policymakers, healthcare workers, community leaders, and clients.

61. Charles, R.O. (2025). Factors influencing treatment outcomes among neonate with tubular git atresia at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Tubular GIT atresia is a time-critical surgical emergency. Survival is high in well-resourced settings, yet outcomes remain poorer in many low- and middle-income countries because of delayed presentation and limited perioperative support. At Muhimbili National Hospital, mortality after intestinal atresia surgery remains substantial and the modifiable drivers of poor outcomes have not been quantified. This study addresses the gap by describing outcomes and evaluating care process determinants, including timeliness of referral and surgery, postoperative ventilation, and initiation of parenteral nutrition, among neonates treated between January 2018 and December 2024.**Objective:** This study aimed to determine the clinical characteristics, treatment outcomes, and factors influencing prognosis among neonates with tubular GIT atresia treated at Muhimbili National Hospital (MNH) between January 2018 and December

2024.**Methods:** A retrospective cohort study was conducted on 106 neonates diagnosed with tubular GIT atresia at MNH. Clinical characteristics, surgical interventions, and post-operative outcomes were analyzed. **Results:** The median age at presentation was 5 days, with an equal distribution of term and pre-term neonates. The most common diagnoses were esophageal (28.3%), duodenal (25.5%), and jejunal atresia (21.7%). Laparotomy was the most common surgical approach (61.3%). Postoperative complications occurred in 32.1% of cases, with sepsis (32.1%), respiratory failure (14.2%), and hemodynamic compromise (9.4%) being the most frequent. Overall mortality was high (62.3%), and complications were significantly associated with reduced survival (Log-Rank $\chi^2 = 77.858$, $p < 0.001$). Hemodynamic compromise was independently associated with mortality (HR: 2.88; 95% CI: 1.02–8.19; $p = 0.047$). **Conclusion:** The study highlights a high mortality rate among neonates with tubular GIT atresia at MNH, largely influenced by late presentation and perioperative complications. Hemodynamic compromise emerged as the strongest predictor of mortality. These findings underscore the urgent need for improved prenatal diagnosis, timely surgical intervention, and enhanced neonatal intensive care in resource-limited settings.

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62. Chepe, R. (2025). Prevalence of Low Back Pain and Associated Factors among BankWorkers in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Low back pain (LBP) is a common musculoskeletal disorder and a leading cause of disability worldwide. In occupational settings, it is particularly common among workers with sedentary jobs that require prolonged sitting and repetitive movements. Bank workers, who usually spend long hours at desks, are at increased risk of developing LBP. In Tanzania, the impact of LBP on workers' health and productivity remains underexplored, particularly in urban settings like Dar es Salaam, where the banking sector is rapidly expanding. Understanding the prevalence of LBP and its associated factors in this demographic is important in developing effective prevention and intervention strategies to safeguard the health and well-being of workers. Objectives: This study aimed to determine the prevalence and associated factors of LBP among bank workers in Dar es Salaam, Tanzania. **Materials and methods:** A cross-sectional study was conducted with 420 bank workers, selected using stratified random sampling. Participants completed an interview-administered questionnaire on demographics, job characteristics, ergonomics, psychosocial factors, and LBP symptoms. Descriptive, logistic regression, and correlation analyses were performed **Results:** The study identified a high prevalence of LBP (78.3%) among bank workers in Dar es salaam, with significant associations across socio demographic, ergonomic, psychosocial and lifestyle factors. Workers aged 34-49 years had an adjusted incidence rate ratio (aIRR) of 1.13 (95% CI: 1.06-1.21, $p < 0.001$), unreasonable deadlines (aIRR= 1.24, $p< 0.001$) and job pressure interfering with family life (aIRR= 1.18, $p < 0.001$), were significantly associated with LBP. Protective factors included having a standing option at work (aIRR= 0.91, 95% CI: 0.83-0.98, p= 0.019) and walking as a mode of transport (aIRR= 0.54, 95% CI: 0.53-0.55, $p< 0.001$). These findings xii underscore the multifactorial nature of LBP and the need for targeted ergonomic and psychosocial interventions to mitigate its prevalence. **Conclusion:** LBP among bank workers is

influenced by ergonomic, psychosocial, and lifestyle factors. Addressing these through measures such as providing properly designed workstations, promoting physical activity, and managing workplace stress may reduce its burden and enhance employee well-being and productivity. Recommendations: A comprehensive approach is needed, including ergonomic improvements, standing desk options, regular breaks, physical activity promotion, stress management programs, and regular health screenings. These measures can create a healthier, more supportive work environment for bank employees.

63. Chepkemboi, F.M. (2025). Clinical Profile, Prevalence and Factors Associated with Adverse Events Among Adult Patients Receiving Procedural Sedation at The Emergency Department at Muhimbili National Hospital; A Prospective Study in Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Procedural sedation is a core competence in emergency medicine, but it is associated with adverse events that can be life-threatening. The prevalence of adverse events during procedural sedation varies across settings. In high-income countries, the scope of procedural sedation is wide, and prevalence is low. However, in resource-limited settings, studies on procedural sedation among adults are limited, and prevalence is not well published. **Methods/materials:** This was a prospective study conducted between April and June 2025, where 106 patients aged 18 years and above who received procedural sedation were enrolled. Clinical characteristics, medications used, and outcomes were recorded. The primary outcome was the prevalence of adverse events. Secondary outcomes were; Success of the procedures, types and lengths of procedure, medication used, and depth of sedation achieved. Descriptive statistics and logistic regression analysis were used to identify independent factors with statistical significance set at <0.05. **Results:** Most patients were male (81.1%), with a median age of 44 years. Computerized tomography scans were the leading indication (41.5%), and ketamine was the predominant agent (64.2%). Adverse events occurred in 47 patients, thus a prevalence of 44% (CI; 35-54), with hypoxia (15.1%) being the most frequent. Independent factors associated with adverse events were: American Society of Anesthesiology class IV (aOR = 3.19, CI; 1.15-8.84), hypoglycemia at arrival (aOR =0.04, CI: 0.002- 0.72). **Conclusion:** Procedural sedation at the Emergency Department, Muhimbili National Hospital, has a significant prevalence of adverse events. This study provides insights to patient specific risks. Our findings suggest the need for adequate pre-sedation screening for risk stratification, tailoring of sedation approach, and consideration of patients' baseline vitals. Future research should explore other patient factors such as body mass index, ethnicity-related metabolic differences, and variability in drug metabolism.

64. Chibwae, A. (2025). Factors influencing the survival of patients with gastric cancer treated at Muhimbili National Hospital. Muhimbili university of health and Allied Science.

Abstract

Introductions: African countries are faced with inadequate registry as well as under estimation of the burden of the gastric malignant patients. Less is known about the gastric cancer in Tanzania especially on survival status as well as clinical profile and histopathological factors for survival among the gastric cancer patients Tanzania. The analysis of factors for survival will optimize different management of patients, improve preventive measures especially earlier diagnosis of gastric malignancy patients. Objective: To determine the survival status and the factors influencing survival status of the gastric cancer patients treated at Muhimbili National Hospital. Methodology: This retrospective study in involved 127 endoscopically and histopathological confirmed and managed gastric cancer patient at 1,3 and 5 years. Clinicopathological profile including the staging of the disease and treatment modalities were retrieved from Electronic Medical Record. Survive status were confirmed by phone call after phone informed consent for those whose information were missing. Crosstabulations, Kaplan-Meier and Cox regression in SPSS done. **Results:** This retrospective study analyzed 127 gastric cancer patients treated at Muhimbili National Hospital. The median age was 55.1 years, with male predominance (61.4%). The antrum was the most common tumor site (47.2%), and intestinal-type histology predominated (59.8%). Most tumors were poorly differentiated (48.8%), and 64.6% presented with metastatic disease. Surgical intervention was performed in 51.2%, predominantly gastrectomy with D1 lymphadenectomy. Poorly differentiated tumors (HR 2.08, p=0.022), total gastrectomy (HR 7.9, p=0.001), non-gastrectomy procedures (HR 0.30, p=0.051), and D2 lymphadenectomy (HR 0.29, p=0.031) were independently associated with reduced overall survival, with median survival of 8 months. **Conclusion:** Most gastric cancer patients in this study presented with advanced disease, and few received perioperative chemotherapy. Overall survival was low, with the highest mortality within the first year after diagnosis. Factors independently associated with decreased survival included poorly differentiated histology, non-gastrectomy procedures, total gastrectomy, and D2 lymphadenectomy. Recommendations include strengthening multidisciplinary management, expanding endoscopic and systemic therapy services and improving perioperative care. Further multicenter studies are needed to investigate delays in presentation and diagnosis, aiming to improve early detection and survival outcomes in resource-limited settings.

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65. Chikomele, J.R. (2025). computed tomography findings of skull base fractures and associated factors among patients with head trauma attending hospitals in Tanzania. Muhimbili university of health and allied sciences.

Abstract

BACKGROUND: Skull base fractures are cortical breaks in the bones forming the skull base, usually linked to major head trauma. CT scan is the gold standard for diagnosis, offering superior resolution, multi-window settings for bone and soft tissue evaluation, and 3D reconstruction that allows better assessment of the skull's complex anatomy compared to plain radiography or MRI. Globally, these fractures occur in about 4%–30% of head injury cases, with incidences expected to rise due to population growth, urbanization, and technological changes. Despite this burden, little is known about their patterns and associated factors in Tanzania. This highlights the need for local research to determine the magnitude, characteristics, and impact of skull base fractures, which remain a significant cause of morbidity and mortality **OBJECTIVE:** The main aim of this study

was to determine computed tomography findings of skull base fractures and associated factors among patients with head trauma at tertiary hospitals in Tanzania i.e. Muhimbili Orthopedic Institute and Muhimbili National Hospital-Mloganzila between June 2024- December 2024 **MATERIALS AND METHODS:** A prospective cross-sectional hospital-based study was conducted at the radiology departments of Muhimbili National Hospital (MNH)-Mloganzila and Muhimbili Orthopedic Institute (MOI) over seven months (June–December 2024). Radiological data were obtained from CT scans, with images reviewed by the principal investigator and confirmed by a senior radiologist. Clinical and demographic information was collected through patient or relative interviews and medical records, using a standardized tool. Data were analyzed with SPSS version 24, applying binary and multivariable regression to assess associations between variables, with p-values <0.05 considered statistically significant. **RESULTS**: Most participants were aged 18–39 years (64.3%), with a mean age of 32 ± 11.08 years. Males comprised the majority (83.7%) with an M:F ratio of 5:1. Headache (92.3%) and loss of consciousness (48.0%) were the most common symptoms. MTAs accounted for 84.2% of cases, with 67.9% being due to motorcycles, with only 29.7% reporting helmet/seatbelt use. Speeding and traffic violations contributed to 71.5% of MTAs. Non-MTAs comprised 15.8% of total accidents, mainly due to falls (54.8%), assaults (35.5%), and sports injuries (9.7%). The anterior cranial fossa was most affected (52%), followed by the middle (34.7%) and posterior (11.2%). Frontal (40.8%) was the most fractured bone, differing from previous studies that mention the temporal bone. In this study, the temporal (35.2%) bone was the second most fractured, with 87% longitudinal orientations and few transverse. Forward falls were linked to anterior fossa fractures (OR = 8.86, $p < 0.001$), lateral falls to middle fossa (OR = 29.4, $p = 0.001$), and backward falls to posterior fossa. Forward (OR = 0.01, $p < 0.001$) and lateral (OR = 0.03, $p < 0.01$) falls significantly reduced posterior fossa fracture risk. **CONCLUSION:** Young adult males were predominantly affected, mainly from motorcycle-related trauma. The anterior fossa and frontal bone were the most commonly fractured; unlike the previous studies, that mentions the temporal bone as the most fractured. Direction of impact was significantly associated with fracture location; forward falls led to anterior fossa fractures, lateral to middle fossa, and backward to posterior fossa fractures. **RECOMMENDATIONS:** This study highlights the need to prioritize CT scans for head trauma patients with symptoms suggestive of skull fractures to ensure timely and accurate diagnosis. Strict enforcement of road safety laws, especially mandatory helmet use and adherence to speed limits, is crucial as motorcycle accidents remain the leading cause. Public health campaigns targeting young adults should raise awareness on safe riding and the risks of reckless driving. Clinicians are encouraged to maintain suspicion of skull base fractures in patients presenting with headache, loss of consciousness, or specific fall directions. Lastly, multicenter research across both rural and urban hospitals is recommended to validate these findings and inform national trauma care policies.

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66. Chilembu, J.K. (2025). "Prevalence, forms and factors associated with Intimate Partner Violence among adolescent girls and young women living with HIV in Dodoma region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Intimate partner violence (IPV) is a widespread and often overlooked public health issue, particularly among adolescent girls and young women (AGYW) living with HIV. IPV multiplies the HIV transmission risk among discordant couples and slows the HIV viral load suppression rate. In Tanzania, women endure various types of intimate partner violence, with sexual violence being the most frequent, affecting approximately 30% of women. However, there is scarcity of evidence on magnitude and factors associated with IPV among the AGYW population with HIV. **Objectives:** The study aimed to determine the Prevalence, forms and factors associated with IPV among AGYW living with HIV in Dodoma region. Methods: A cross-sectional study was conducted among HIV-infected AGYW on ART attending selected care and treatment clinics in Dodoma. Purposive sampling was used to select councils and health facilities, while systematic random sampling was applied to recruit participants. Data were collected using a structured questionnaire adapted from the Tanzania Demographic Health Survey- Malaria Indicator Survey (TDHS-MIS) 2022 and World health organization (WHO) Multi-country Study on Women's Health and Domestic Violence Against Women via Kobo. Analysis was performed using STATA version 17. Categorical variables were summarized using frequencies and proportions; continuous variables were described using means and standard deviations or medians with interquartile ranges, based on distribution. A modified Poisson bivariate and multivariable regression models were used to estimate the prevalence ratio (PR) at statistical significance of $p<0.05$. **Results:** A total of 355 AGYW living with HIV who had mean age (SD) of 21.1±2.5 years participated in this study. Among these, 54.4% had experienced IPV within the last 12 months, with sexual IPV being the commonest form (30.9%), followed by physical (30.7%) and emotional IPV (29.9%). The risk for IPV was seen higher among women with multiple sexual partners (aPR=1.87, 95% CI:1.42-2.47), and women having partners involved in physical fights (aPR=1.51, 95% CI:1.27-1.81). Each year increase in AGYW's age and having a non-alcoholic partner decreased the risk for IPV, by 4% (aPR = 0.96, 95% CI: 0.92– 0.99) and 35% (aPR=0.65, 95% CI:0.49-0.86) respectively. **Conclusion and Recommendations:** This study revealed a high prevalence of intimate partner violence (IPV) among adolescent girls and young women (AGYW) living with HIV vi in the Dodoma region, with sexual IPV being most common. Key risk factors included younger age, partners with multiple sexual relationships, alcohol use, and aggressive partner behaviors. These findings highlight the complex and multifactorial nature of IPV in this group and emphasize the need for targeted interventions to address these risks and mitigate the adverse impacts of IPV among AGYW living with HIV.

67. China, V.B. (2025). Examining the Level, Determinants and Inequality of Health-Related Quality of Life Among Patients with Type 2 Diabetes in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The prevalence of Type 2 Diabetes (T2D) is escalating rapidly in Low- and Middle-Income Countries (LMICs), imposing a significant strain on health systems that are already facing resource limitations and service inadequacies. Patients with chronic conditions, such as T2D, are particularly susceptible to these systemic obstacles, which can diminish their well-being and contribute to disparities in health outcomes. Although understanding healthrelated quality of life

(HRQoL) is crucial as a metric for evaluating healthcare effectiveness and equity, research exploring the socioeconomic factors that impact HRQoL among diabetes patients in LMICs is still limited. Hence, this study addressed this gap by examining the level, determinants, and socioeconomic inequalities in HRQoL among patients with T2D in Tanzania, providing evidence to support policies aimed at strengthening health systems and promoting equity. **Methods:** The study used secondary data obtained from a cross-sectional survey that involved 322 adults diagnosed with T2D in the Morogoro and Dar es Salaam regions of Tanzania. Eligible patients were recruited from facility registers and interviewed in one health center and three hospitals in each region, with data collected in February 2022. HRQoL index scores were generated using a Uganda value set based on the health states variables derived from responses to the EQ-5D-5L generic questionnaire. Household socioeconomic status was used to measure inequality in HRQoL. Inequality was examined using the inequality gap, ratio, and the concentration index. A Tobit regression model was applied to identify socioeconomic and demographic determinants of HRQoL, and a decomposition analysis of the concentration index was conducted to determine the relative contribution of these determinants to socioeconomicrelated inequality in HRQoL. **Results:** The study showed a moderately high average HRQoL score (0.83) among individuals with T2D, with pain/discomfort and mobility being the most affected EQ-5D dimensions. Older age, female gender, unemployment and multiple comorbidities were all substantially related to lower HRQoL. The concentration index was 0.000005 (p= 0.999), showing no statistically significant inequality of HRQoL by household socioeconomic status, although significant xii variations were found between the two study areas. These findings show the impact of demographic and health-care system variables on patient-reported outcomes. Conclusion: Despite the absence of significant inequality across wealth quintiles, geographical inequality indicates gaps in healthcare access and delivery. These findings highlight the need for equity-focused interventions and encourage the incorporation of HRQoL indicators into diabetes care to influence progress toward Universal Health Coverage. **Recommendations:** Extending comprehensive management of diabetes, improving service delivery in underperforming areas, and incorporating HRQoL assessment into standard practice. Older adults, women, and patients with comorbidities should receive special attention through inclusive, gender- and age-sensitive initiatives that are align with national and global health priorities.

68. Chuwa, M.S. (2025). Feasibility of integrating stroke rehabilitation services in the national telemedicine platform in Tanzania: a mixed-methods study. Muhimbili University of Health and Allied Science.

Abstract

Background: Rehabilitation services are estimated to be needed by 1 in 3 individuals, which amount to roughly 2.6 billion people worldwide, with a staggering 79% increase in disability-years since 1990. Among the leading causes of death and long-term disability, stroke is still the major one; thus, the need for rehabilitation is great. On the other hand, low- and middle-income countries such as Tanzania face their patients with limited access to post-stroke rehabilitation, whereas telemedicine integration of such services has not been thoroughly explored yet. **Objective:** To assess the feasibility of integrating rehabilitation services for stroke survivors into the national

telemedicine platform. **Methods and tools:** This study employed a convergent mixed-methods approach, utilising an online questionnaire and key informant interviews to gather data on the feasibility of integrating rehabilitation for stroke survivors into the national telemedicine platform. We explored organisational, individual and technical factors influencing the adoption of telemedicine. Participants were purposively selected; respondents' data were collected from an online survey of 304 participants. Qualitative data were gathered through interviews with 13 participants. Quantitative data was analysed using descriptive and multivariable models, and qualitative data through thematic analysis. Results: It was revealed that 31.6% of rehabilitation professionals perceived that it was possible to integrate stroke rehabilitation into telemedicine. Despite these barriers, professional interest, which was initially high, and the presence of opportunities, such as administrative readiness, was found to be enablers for integration. The MOH should develop telerehabilitation guideline, provide digital health capacity among the therapists, and support the implementation of the system in a sustainable and effective way. **Conclusion:** Integration of stroke rehabilitation into telemedicine platforms in Tanzania is feasible but dependent on improvements in policy, infrastructure, and digital capacity.

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69. Constatine, G. (2025). Uptake of vaccine against human papiloma virus and associated factors among adolescent girls in secondary schools of Ilemela district, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer remains a major public health challenge globally, especially in low- and middle-income countries. In Tanzania, it is a leading cause of morbidity and mortality among women. Although the HPV vaccine is a proven preventive measure, its uptake and factors associated among adolescent girls in Ilemela District remains uncertain, raising public health concerns. Therefore, the study assessed the uptake of the human papillomavirus (HPV) vaccine and examined associated factors among adolescent girls attending secondary schools in Ilemela District, Mwanza Region, Tanzania. **Methods:** A school-based cross-sectional study was conducted among 564 secondary school girls aged 14 years and above, randomly selected from 5 schools in three wards of Ilemela District. Data on HPV uptake and associated factors were acquired using self-administered questionnaire with vaccine uptake verified by vaccination cards. Descriptive statistics and logistic regression analysis were conducted to analyse the association between HPV uptake and factors associated with uptake. **Results:** The HPV vaccine uptake among secondary school girls in Ilemela District was 71.0% (95% CI: 67.2%-74.8%). Uptake was significantly higher among girls aged 15-17 years (74.6%) compared to those aged 18-20 years (60.8%, $p = 0.002$), and among students in public schools (74.6%) than in private schools (52.3%, $p < 0.001$). Higher uptake was also observed among girls with educated parents, those whose parents were employed or self-employed, and those from high-income households (100%) compared to middle (79.8%) and low-income households (41.0%) ($p < 0.001$). Furthermore, vaccine uptake was significantly greater among girls with high knowledge (74.5%) compared to moderate knowledge (51.8%, $p < 0.001$), those with positive perceptions (80.0%) versus negative (61.0%, $p < 0.001$), and those with positive attitudes (75.0%) compared to negative attitudes

(65.0%, p = 0.012). Multivariable logistic regression showed that HPV vaccine uptake was significantly associated with age group (AOR = 1.82; 95% CI: 1.07-3.11), school type (AOR = 3.12; 95% CI: 1.77-5.51), mother's education (AOR range = 2.85-5.17), father's employment (AOR = 3.55; 95% CI: 1.08-11.62), and family economic status (AOR = 5.13; 95% CI: 3.11-8.48). Significant associations were also found with knowledge level (AOR = 2.94; 95% CI: 1.67-5.18), attitude (AOR = 1.68; 95% CI: 1.08-2.62), and perception (AOR = 2.69; 95% CI: 1.72-4.22). **Conclusion:** HPV vaccine uptake was high among secondary school girls in Ilemela District. Uptake was strongly influenced by high knowledge levels, positive perceptions, and favorable attitudes toward HPV, the HPV vaccine, and cervical cancer. Social factors such as age, school type, mother's education, father's employment, and family economic status were also significant. These findings underscore the need for targeted education and equity-focused strategies to sustain and improve HPV vaccine coverage.

70. Cosmas, D. (2025). Short-term functional outcomes of patients with metatarsal fractures following intramedullary k-wire osteosynthesis at Muhimbili Orthopaedics Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Metatarsal fractures are common orthopedics injuries, often resulting from traumatic incidents or overuse activities. Metatarsal fractures are frequent foot injuries making them the most common fractures of the foot accounting for up to 35% of all foot fractures. The first, fifth, and central metatarsals are the three groups that make up the metatarsals anatomically.Intramedullary fixation with antegrade or retrograde K-wires is the commonest surgical treatment for central metatarsal fractures, treatment of metatarsal fractures aims to realign the five metatarsal bones to maintain the longitudinal and transverse arch of the forefoot as well as a normal distribution of weight underneath the metatarsal heads. Even though K-wire osteosynthesis is the most commonly used option for managing metatarsal fractures, the functional outcomes of intramedullary K-wire osteosynthesis for metatarsal fractures have not been objectively evaluated in our setting. As a result, there is no reliable tool to guide the treatment of these fractures. This highlights a significant gap in the comprehensive assessment of functional outcomes following this surgical intervention. **Objective:** The study aims to determine the short term-functional outcome of patients with metatarsal fractures after intramedullary K-wire osteosynthesis at Muhimbili Orthopaedics Institute (MOI). **Methodology:** Prospective cohort study (single-arm), which enrolled consented patients 18 years of age and older with metatarsal fractures (AO/ICI Type A) treated by K-wire at Muhimbili Orthopaedics Institute (MOI) during the study period. Data collection was done by structured questionnaire including the Maryland Foot Score. Patients were followed up during 12th-week outpatient visits and filled in the questionnaire. Statistics and data software (STATA) 17 were used to describe associations between short-term functional outcomes and independent variables such as socio-demographic characteristics (age, sex), fracture type (open or closed), side affected, mechanism of injury, metatarsal involved, other associated injuries, time to surgery, post-operation hospital stay,

physiotherapy and time to k-wire removal, Multivariate logistic regression was used to obtain an adjusted odd ratio and 95% confidence interval to identify the strength of the association between dependent and independent variables. A variable with $p<0.05$ was considered statistically significant. **Result:** A total of 33 patients were enrolled in the study. The mean age was 30 ±11.71 years. The majority of the patients were males accounting for 90%. More than half of patients (57.58%) achieved a good functional outcome post-treatment using the Maryland foot functional score. Notably, only one participant (3.03%) experienced treatment failure. Regarding pain levels, three-quarters of patients (75.75%) reported experiencing slight pain post-treatment. Furthermore, the majority of patients (70%) demonstrated good functional mobility outcomes following their treatment. However, the association between short-term functional outcomes and independent variables was not statistically significant. **Conclusion and recommendation:** These findings suggest that patients with metatarsal fractures (AO/ICI Type A) undergoing intramedullary K-wire osteosynthesis at MOI experience good short-term functional outcomes at 12 weeks post-surgery. While sex, age, Other associated injuries, Metatarsals involved, Time to surgery, Time to k-wire removal, and Physiotherapy, did not significantly impact outcomes at this follow-up point, further research which is multicentred, with larger sample sizes and longer study periods is warranted to investigate longer-term functional recovery and potential factors influencing functional outcomes.

71. Cyprian, J. (2025). Perceptions on the Role of Competency-Based Equipment User Training in Enhancing Healthcare Providers' Skills in Utilizing bubble Continuous Positive Airway Pressure Devices for Newborn Care, in Dar es Salaam Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Neonatal respiratory distress remains a leading cause of newborn mortality in low- and middle-income countries. Bubble Continuous Positive Airway Pressure (bCPAP) is a proven, life-saving intervention for managing respiratory distress syndrome (RDS), particularly in preterm infants. However, the effectiveness of this intervention in resource-limited settings is often hindered by inadequate training, poor equipment handling, and lack of provider confidence. **Objective:** To explore how competence-based equipment user training is perceived to enhance the skills of healthcare providers in utilizing bCPAP devices for newborn care. **Methods:** A phenomenological qualitative study was conducted in three regional referral hospitals in Dar es Salaam. In-depth interviews were conducted with 12 healthcare providers, including doctors and nurses who had received formal training on bCPAP. Data were transcribed, translated, and thematically analysed to identify patterns related to pre- and posttraining experience and practice. **Results:** Six themes emerged from the study, highlighting the significant changes in clinical practice and confidence among providers. Participants reported improved skills in initiating, monitoring, and using bCPAP prophylactically. Training also was reported to enhance the improvement in equipment maintenance, clinical decision making, and reduced newborn referrals and deaths. Collaboration with biomedical technicians strengthened, and the importance of continuous CPAP training was emphasized. Participants recommended integrating bCPAP training into preservice education and extending it to lower-level health facilities to improve newborn

outcomes. **Conclusion:** Competency-based training enhanced neonatal respiratory care by improving provider confidence, multidisciplinary collaboration, and continuous learning. Sustaining these improvements requires ongoing mentorship, regular refresher training, and integration of bCPAP instruction into preservice education. Scaling this model to lower-level facilities could further strengthen the quality, safety, and accessibility of newborn care.

72. Dadi, H.S. (2025). Effectiveness of simulation training in improving healthcare workers' ability to implement one-hour sepsis bundle at kivunge district hospital of unguja-zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The One-hour sepsis bundle is a proven approach to improve outcomes for sepsis patients, but its success varies by setting. In Unguja, Zanzibar, Healthcare workers face challenges in sepsis management, leading to inconsistent results. Simulation training may help improve healthcare workers' ability to implement a one-hour sepsis bundle in resource-limited settings like Unguja. There is limited evidence on how this simulation training can enhance this ability in Unguja. The need for this training and resources in these settings is critical to improve patient care. **Objectives:** This study aims to evaluate the effect of simulation training on healthcare workers' implementation of the one-hour sepsis bundles in managing sepsis at a district hospital in Unguja, Zanzibar. **Methods:** The quasi-experimental study of a one-group pre-post interventional design**.** A quasi-experimental design was used involving 60(14 Doctors and 46 Nurses) at Kivunge District Hospital in Unguja, Zanzibar. The pre-interventional data were collected using a structured questionnaire and simulation-based assessment. Then participants underwent simulation-based training focused one-hour sepsis bundle. Data were analyzed using SPSS version 27, descriptive statistics, and the Wilcoxon signed-rank test was applied to compare pre- and post-intervention outcomes, with a significance level set at $p<0.05$. **Results:** The median score significantly improved post-training: knowledge from 11 (IQR: 10–13) to 20 (IQR: 19–20), skill from 18 (IQR: 16–20) to 24 (IQR: 24–25), confidence levels from 37 (IQR: 36–38) to 49 (IQR: 48–50), and clinical decision-making from 3 (IQR: 2–4) to 5 (IQR: 4–5). Profession significantly predicted knowledge improvement ($B = –1.88$, $\beta = –0.33$, $p = 0.018$), education level showed a borderline association with clinical decision-making accuracy, ($B = –0.55$, $\beta = –0.28$, $p = 0.056$) and other demographics had no significant effect. **Conclusion:** Simulation training significantly enhances healthcare workers' knowledge, skills, confidence, and decision-making abilities in implementing a one-hour sepsis bundle, with professionals predicting significant knowledge gains, highlighting its value as a regular practice to maintain the ability to implement a one-hour sepsis bundle.

73. Dainess, R. (2025). Medication Adherence, Treatment Outcomes, and Associated Factors Among Adults with Psychotic Disorders on Antipsychotics at Muhimbili National Hospital, Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Medication adherence is important for achieving good treatment outcomes like reduction of symptom severity and reducing side effects, hence improving quality of life. In Sub-

Saharan Africa, the prevalence of poor adherence to antipsychotics is still high (37.7% -51.2%). Different interacting factors grouped into socioeconomic, health care system related, condition-related, therapy-related and patient-related factors have been associated with medication adherence and treatment outcomes of antipsychotics. **Aim:** To investigate medication adherence, treatment outcomes and associated factors among adult individuals with psychotic disorders on antipsychotics. **Materials and Methods:** A cross-sectional study design involved 253 adults with psychotic disorders on antipsychotics at Muhimbili National hospital. Data were collected through face-to-face interviews using a structured questionnaire covering socio-demographic and clinical information. Validated tools assessed key variables: patient-healthcare provider communication (Patient Reaction Assessment (PRA)), medication adherence (MARS), psychotic symptoms (BPRS-16), side effects (GASS) and quality of life (WHOQOL-BREF). Data were analyzed using SPSS-27 with descriptive statistics, chi-square/Fisher's exact tests, Mann-Whitney U test, and binary logistic regression to identify associations. **Results:** Among 253 adults with psychotic disorders at MNH, 15.8% had poor adherence to antipsychotic medications. Schizophrenia was the most common diagnosis (67.6%), and most participants (89.3%) were on monotherapy. Mild psychotic symptoms predominated (78.8%), with antipsychotic side effects being reported by 85%, mainly sedation and extrapyramidal symptoms (both 51%). Poor adherence was significantly associated with antipsychotic polytherapy (aOR=3.22, 95% CI; 1.22 – 8.53), p=0.018 and lack of health insurance (aOR=2.43, 95% CI; 1.01 – 5.86), p=0.048. Those with poor adherence had significantly ($p< 0.05$) lower median Quality of life scores across all assessed domains compared to those with good adherence. **Conclusion and recommendation:** About one in every six patients were not adhering to antipsychotic treatment. The factors significantly associated with poor antipsychotic adherence among study participants included polypharmacy and lack health insurance. Most participants had mild symptoms and side effects. The QoL was satisfying across all key domains. Those with poor adherence were more likely to have poor quality of life. These findings highlight the need for simplified regimens by the physicians and continued emphasis by the ministry of health to citizens on importance of possessing a health insurance. Also, adherence enhancing strategies by medical personnel should continue from primary to tertiary hospital levels.

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74. Danda, A.F. (2025). Multicenter Cross-Sectional Study on Clinicians' Opinions, Views, And Expectations on Radiological Reports in Dar Es Salaam Region. Muhimbili university of health and Allied Sciences.

Abstract

Introduction: Opinions and views are important indicators of quality and value. Radiology reports serve as the primary communication medium between radiologists and attending clinicians; however, there is a lack of formal feedback mechanisms to support their improvement. This study revealed previously unaddressed inter-specialty disagreements and examined the adherence to principles of good reporting. In the context of Tanzania's ongoing medical imaging transformation, it is imperative to assess the perceived quality of radiologists' output to address the existing paucity of local and national data **Aim:** The aim was to assess clinicians' opinions, views, and expectations on radiology reports among clinicians in the Dar es Salaam region **Materials and methods:** A

multicenter cross-sectional study was conducted in the Dar es Salaam region involving 320 clinicians. Data were collected using a self-administered questionnaire or a Google Form. Analysis was performed using Epi Info™ version 7.2.0.1. Descriptive statistics, including frequency distributions, proportions, and means, were used to summarize the data at the univariate level, while the chi-square test was applied to assess statistical significance. **Results:** The majority of clinicians had a positive opinion on understandability (79%), clarity (92%), and relevance (91%) of radiology reports; the standardised report format (83%) is preferred. Preference for the location of positive findings was almost evenly distributed (54% vs 46%) between being first and at the respective place. Use of standardised lexicons/grading systems where applicable (93%) and clarification of radiological terms used in the conclusion (55%) were also more appealing to clinicians. The majority were satisfied with the content (87%) and radiology reports in general (86%). They acknowledged that it's one of the pillars they rely on for making day-to-day medical decisions. Conclusion: The study revealed that the majority of clinicians in the Dar es Salaam region had positive opinions/views and expectations on radiology reports. Unpunctual report delivery and timely communication of critical/urgent findings were the few shortcomings encountered. **Recommendations:** There is a need for improvement in the aspect of timely delivery and in-person, timely communication of critical/urgent findings to attending clinicians.

75. Daud, F.S. (2025). Satisfaction with pain management and associated factors among post-operative patients at Mnazi Mmoja Hospital, Zanzibar. Muhimbili University of Health and Allied Sciences

Abstract

Background: Postoperative pain is a critical yet often neglected issue, particularly in low-resource settings like Zanzibar, where healthcare systems are weak, and data on pain management is limited. Limited access to analgesics, inadequate pain assessment practices, and insufficient training of healthcare providers exacerbate the problem. In Tanzania, studies report postoperative pain prevalence of 70-85% within 24 hours. This research aims to bridge this gap by evaluating the factors associated with pain management and satisfaction among postoperative patients at Mnazi Mmoja Hospital. **Aims:** To assess the factors associated with pain management and satisfaction among postoperative patients at Mnazi Mmoja Hospital, Zanzibar. **Materials and methods:** This was an analytical cross-sectional study design. A sample size of 149 patients was assessed for postoperative pain management and satisfaction using patient interviews and medical records. Data were collected over two months. Pain was measured through self-reported pain scores, while management modalities (pharmacological and non-pharmacological) were obtained from health records, and satisfaction levels were evaluated using a Likert scale. Data were analysed using descriptive and inferential statistics, with significant associations determined at a p-value <0.05 using SPSS version 27. **Results:** Out of 149 post-operative patients, 145 (97.3%) reported experiencing pain. A total of 148 (99.3%) received pain medication, with non-steroidal anti-inflammatory drugs (NSAIDs) used in 107 (71.8%) cases, and non-pharmacological methods were used by 52 (34.9%) patients. Overall, 81 (54.4%) patients were satisfied with the pain management they received (mean satisfaction score = 28.64, SD = 10.51). Younger age (18–35 years) was significantly associated with higher satisfaction, 1.62 (1.48–1.76; p = 0.031). Patients who

reported their pain to healthcare providers had increased odds of satisfaction, 1.81 (1.76–2.17; p = 0.037), while those who received pain medication were more likely to be satisfied, 1.67 (1.52–1.86; p = 0.002). Receiving analgesics at regular intervals rather than on request also improved satisfaction, 1.86 (1.71–2.04; p = 0.029). Additionally, patients who perceived their pain management as adequate had greater satisfaction, 1.64 (1.53–1.77; p < 0.001). Conclusion: Post-operative pain was highly prevalent and often severe among patients at Mnazi Mmoja Hospital, yet gaps were identified in pain assessment, patient education, and timely administration of analgesics. Although most patients received pain medication, satisfaction with pain management remained moderate. Improving structured pain assessment, patient education, and timely, regular analgesic administration are essential to enhance pain control and patient satisfaction. **Recommendations:** To address the high prevalence and severity of post-operative pain, the Mnazi Mmoja Hospital administration should implement structured and routine pain assessments using validated tools such as the Visual Analogue Scale (VAS) or Numeric Rating Scale (NRS) for all surgical patients. Pain management protocols must include scheduled (not just on-demand) administration of analgesics, particularly within the first 24 hours post-surgery, to ensure proactive rather than reactive care.

76. Deogratias,E.(2025). Incidence, patterns and predictors of adverse events following . Muhimbili University of Health and Allied Sciences.

Abstract

Background: Rabies is a highly fatal disease with an almost 100% fatality rate once it becomes clinical. It is estimated to cause approximately 59,000 deaths globally each year, with children under 15 years being the most affected population and over 90% of cases occurring in Africa and Asia. The disease persists in economically disadvantaged areas characterized by high populations of uncontrolled free-roaming dogs, low animal vaccination coverage, and limited access to timely and adequate post-exposure prophylaxis (PEP). Despite the proven effectiveness of rabies vaccine PEP in preventing the disease, no studies have been conducted in Tanzania to evaluate its safety profile. Several international studies have reported a range of adverse events following rabies PEP, from mild to severe, and affecting both local and systemic systems, and varying by vaccine type. However, such studies have not yet been conducted in our setting**Objectives:** This study aimed to determine the incidence, patterns and factors associated with adverse events following the use of rabies vaccine PEP among suspected rabid dog bite victims from selected regions in Tanzania.**Methodology:** This single-arm, non-interventional, hospital-based prospective cohort study was conducted between April and June 2025. A total of 134 suspected rabid animal bite victims who had received at least one dose of rabies PEP were recruited and followed up for an average period of 28 ± 5 days. Enrollment was done via initial physical visits, while a mobile phone-based survey complemented the follow-up. The R programming language (version 4.5.1.) was used for data analysis, and results were summarized using frequencies and percentages. The robust modified Poisson regression model was used to determine predictors of adverse events.**Results:** The median age was 24.5 years (IQR: 10–47.75). Of the 134 participants, 113 (84.3%) received both rabies vaccine and rabies immunoglobulin, while 21 (15.7%) received the rabies vaccine alone. The majority received the vaccine via the intramuscular route (102; 79.1%),

while the rest were vaccinated intradermally. A total of 104 participants (77.6%) followed the five-shot regimen, while the remaining were on a three-shot regimen. Most bites were inflicted by stray dogs (104; 77.6%), compared to owned dogs (20; 14.9%). The most commonly affected bite sites were the lower extremities (64; 48%) and the upper extremities (45; 36.2%). Of the 134 participants, 37 (27.6%) experienced at least one adverse event. Local pain (29%), headache (19%), swelling (19%), and fever (14%) were the most commonly reported events, with most occurring after the first, third, and second shots, respectively. Among the 37 adverse event cases, 34 (91.8%) were non-serious and resolved within a few days without any intervention. Children and adolescents under 20 years of age had a higher proportion of adverse events (64.9%) compared to other age groups. Significant predictors of adverse events included being under 20 years of age [(p = 0.0394, aRR = 2.27, 95% CI: 1.21–3.64)], receiving both rabies vaccine and immunoglobulin [(p = 0.0339, aRR = 2.16, 95% CI: 1.31–3.55)], and being on concomitant medications [(p = 0.0343, aRR = 2.24, 95% CI: 1.27–3.95)].**Conclusion:** Although adverse events following rabies vaccine PEP are relatively common, the majority are categorized as mild to moderate, well tolerated, and short-lived. Individuals under 20 years of age, those on concomitant medications, and those scheduled to receive both rabies immunoglobulin (RIG) and rabies vaccine (RABV) should be properly counseled and closely monitored beforehand for potential severity and seriousness of these events. Individuals who present to health facilities and initiate rabies vaccine PEP should be encouraged to complete the full regimen, as rabies biologics are generally safe, with only minor, transient, and well-tolerated adverse effects.

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77. Deus, T.K. (2025). Experiences of Care among Women Diagnosed with Pre-eclampsia with severe features and Eclampsia at Temeke Regional Referral Hospital in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pre-eclampsia with severe features (PEWSF) and Eclampsia (E) are among the leading causes of maternal mortality, maternal near misses, as well as postpartum depression. National and international guidelines recommend the provision of information on PEWSF/E and the provision of emotional support to pregnant women diagnosed with PEWSF/E. However, gaps remain in the literature regarding the type of information provided, their emotional experiences and the emotional support provided to women with PEWSF/E. Aim of the study: This study explored experiences of care among women diagnosed with PEWSF/E at Temeke Regional Referral Hospital in Dar es Salaam, Tanzania **Materials & Methods:** A qualitative phenomenological study design was employed. Postdischarged postpartum women, before leaving the hospital, who had PEWSF /E were interviewed. Purposeful maximum variation sampling was used. In-depth exit interviews were conducted with sixteen participants using a semi-structured interview guide. The thematic analysis approach was used to analyse data.**Results:** Five key themes emerged: 1) Information provision and Unmet information needs; 2) Distressing feelings and Emotional reactions; 3) Provision of emotional support; 4) Perceived barriers and facilitators in accessing care and information provision; and 5) Participants' suggestions for improvement on accessing care and information provision. **Conclusion and recommendation:** This study has revealed that many participants were provided with information about danger signs, BP screening

during antenatal clinics and postdelivery follow-up. This study also identified that participants had unmet information needs on danger signs, what happened to them when they were admitted in acute condition, the causes of high blood pressure, and causes and prevention strategies of eclampsia, PE/E recurrence in future pregnancy, future health risks, rationale for medication use and reasons for laboratory investigation. Furthermore, this study revealed that participants had fears, which also provoked various emotional reactions. vi This study highlighted that family members, significant others, health care providers and religious faith provided key support and were key in coping. **This study recommends that:** providing information to patients with PEWSF/E regularly, encouraging women to attend postnatal followup, ensuring that healthcare providers and environments anticipate these distressing feelings, emotional reactions and respond with evidence-based information and emotional support, also involving family members and significant others in care provision and creating a more enabling environment for their involvement in care.

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78. Dickson, G. (2025). diagnostic accuracy of cross-sectional imaging in orbital and ocular tumors: histopathological comparison at Muhimbili National Hospital and Muhimbili Orthopaedic Institute, Tanzania. Muhimbili University of Health and Allied sciences.

Abstract

Introduction and Rationale: Ocular and orbital tumors are a heterogeneous group of neoplasms arising within the globe and surrounding orbital structures. Their prevalence varies globally, with higher incidence reported in pediatric and elderly populations, highlighting the need for context-specific evaluation. Accurate diagnosis is critical for appropriate management, yet clinical assessment alone is often insufficient. Cross-sectional imaging modalities, including computed tomography (CT) and magnetic resonance imaging (MRI), provide detailed anatomical and tissue characterization, though their diagnostic performance varies, with differences in sensitivity, specificity, and overall accuracy across tumor types. Histopathology remains the gold standard for definitive diagnosis. Therefore, evaluating the diagnostic accuracy of cross-sectional imaging compared with histopathology is essential to improve diagnostic confidence, guide management, and optimize outcomes for patients with ocular and orbital tumors. **Objective:** To determine the diagnostic accuracy of cross-sectional imaging in the evaluation of orbital and ocular tumors with histopathological comparison at Muhimbili National Hospital and Muhimbili Orthopaedic Institute, Tanzania. **Methodology:** A cross-sectional study using secondary data was conducted at the Radiology and Pathology Departments of Muhimbili National Hospital and Muhimbili Orthopaedic Institute, including 98 patients of all ages with orbital and ocular tumors referred for CT or MRI between June 2021 and June 2024. Data on socio-demographics, clinical presentation, imaging findings, and histopathological diagnoses were collected using a structured checklist.

Categorical variables were summarized as frequencies and percentages, while continuous variables were described using median, and standard deviation. The diagnostic performance of CT and MRI was assessed against histopathology as the reference standard, calculating sensitivity, specificity, positive and negative predictive values, and overall accuracy. All analyses were performed using SPSS version 25, and results were presented in tables and figures to demonstrate the accuracy of cross-sectional imaging in evaluating orbital and ocular tumors. **Results:** Ninety-eight patients with orbital and ocular tumors were evaluated, with a predominantly paediatric population of 84(85.7%) aged 0–12 years. Retinoblastoma was the most common tumour, accounting for 79(80.6%) of imaging and 77(78.6%) of histological diagnoses. Leukocoria 59(60.2%) and proptosis 17(17.3%) were the leading clinical presentations. Cross-sectional imaging was highly correlated with histopathology in 82(83.7%) cases. CT showed 100% diagnostic accuracy for retinoblastoma but lower specificity for squamous cell carcinoma (83.0%, PPV 20.0%). MRI offered excellent sensitivity and NPV across most lesions, with reduced specificity for retinoblastoma and SCC due to false positives. **Conclusion:** Orbital and ocular tumors in this cohort were predominantly pediatric, with retinoblastoma being the most common tumor. Cross-sectional imaging (CT and MRI) demonstrated high diagnostic performance, particularly for retinoblastoma and benign soft tissue lesions, with CT showing excellent accuracy and MRI providing high sensitivity and negative predictive value across most lesions. However, imaging alone was less reliable for certain adult-onset tumors, such as squamous cell carcinoma, due to lower specificity and false positives, underscoring the essential role of histopathology as the reference standard for accurate diagnosis. **Recommendations:** Cross-sectional imaging should be maintained as a frontline diagnostic tool due to its effectiveness in assessing orbital and ocular tumours; however, histopathological confirmation must be mandated, particularly in non-paediatric or diagnostically ambiguous cases, to ensure accuracy and prevent misdiagnosis.

79. Dido, D. H. (2025). Short-term outcomes and quality of life among motorcycle crash polytrauma victims managed at Muhimbili Orthopaedical Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Motorcycle crash-related polytrauma remains underreported in Tanzania, despite its growing public health burden. Limited data exist on the socio-demographic profiles, injury patterns, short-term outcomes, and quality of life (QoL) of affected patients, particularly in resource-constrained settings like Muhimbili Orthopaedic Institute (MOI). **Objective**: To assess short-term clinical outcomes and quality of life among motorcycle crash polytrauma victims managed at MOI. Methods: A descriptive cross-sectional study was conducted at MOI from July to December 2024. Consecutive polytrauma patients involved in motorcycle crashes were recruited and assessed using an investigator-administered questionnaire. Injury severity was evaluated using the Injury Severity Score (ISS), Glasgow Coma Scale (GCS), and Abbreviated Injury Scale (AIS). Quality of life was measured using the euro-qual tool (EQ-5D-5L). Data on socio demographics, clinical and radiological findings were analysed using descriptive statistics**. Results**: A total of 70 patients were enrolled, with a mean age of 42.1 years (SD ±14); 62.9% were male. Chest injuries (25.7%) and head injuries/multiple fractures (17.1%) were common, while 40.0% had no

additional injuries. Pedestrian-related collisions accounted for 28.6% of cases. Injury distribution showed 42.9% had left-sided injuries and 24.3% had bilateral injuries. Closed fractures were present in 34.3%, predominantly simple fractures (58.6%). Regarding QoL, 28.6% rated their health as good, 18.6% as very good, and 18.6% as poor. Mobility challenges (53%) and self-care difficulties (36%) were frequently reported. **Conclusion:** The majority of motorcycle crash polytrauma victims experienced significant physical limitations and suboptimal health perceptions in the short term. Targeted rehabilitation and individualized care plans are recommended to enhance recovery and improve quality of life. **Keywords:** Motorcycle crash, Polytrauma, Injury severity, Quality of life, The euro-qual tool (EQ-5D-5L), Short-term outcomes.

80. Diyami, S. D. (2025). Accuracy of urine dipstick specific gravity in determining volume status compared to point of care ultrasound among critically ill adult patients with hyponatremia presenting at the emergency department of Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Accurate assessment of volume status in hyponatremic critically ill patients is essential for guiding therapy in emergency settings. Urine dipstick specific gravity (USG) is simple and accessible, but its diagnostic accuracy compared with point-of-care ultrasound (POCUS) remains unclear. **Methods:** We conducted a cross-sectional diagnostic study at the emergency department of Muhimbili National Hospital from May to June 2025. Critically ill adults (≥18 years) with confirmed hyponatremia (serum sodium <135 mEq/L) underwent USG and POCUS evaluation. Volume status was classified as hypovolemic, euvolemic, or hypervolemic using predefined USG cut-offs and inferior vena cava collapsibility/distensibility indices on POCUS (reference standard). Diagnostic accuracy of USG was assessed using sensitivity, specificity, predictive values, and likelihood ratios. **Results:** Of 220 patients (median age 51 years, 51.8% male), 59.1% had mild hyponatremia. USG identified 71.3% as hypovolemic, 25.9% euvolemic, and 2.7% hypervolemic. Compared to POCUS, USG had sensitivity 76.7% (95% CI: 68.0–84.1) and specificity 34.6% (25.6–44.6) for hypovolemia; sensitivity 25.0% (14.0–38.9) and specificity 73.8% (66.5–80.3) for euvolemia; and sensitivity 9.6% (3.2–21.0) and specificity 99.4% (96.7–100.0) for hypervolemia. **Conclusion:** USG demonstrates limited diagnostic accuracy for volume status in hyponatremic critically ill adults. While it may provide preliminary information in resource-constrained settings, it is unreliable for detecting euvolemia and hypervolemia. POCUS using inferior vena cava assessment should be prioritized whenever available to guide fluid management

81. Dominick, H. (2025). Prevalence And Determinants of Zero-Dose and Under-Immunization Among Children Living in Urban Slums in Dar Es Salaam and Peri-Urban Areas in Pwani Region, Tanzania: A Cross-Sectional Study. Muhimbili University of Health and Allied Sciences

Abstract

Background: Immunization is one of the most successful and cost-effective interventions in public health for preventing childhood morbidity and mortality, averting an estimated 4.4 million deaths yearly. Between 2011 and 2020, immunization was estimated to have prevented 39.5 million deaths worldwide (14.4 million in the WHO African Region), and between 2021 to 2030, it could potentially prevent another 51 million deaths (23 million in the African region). However, millions of children in sub-Saharan Africa, particularly those residing in hard-to-reach areas, urban slums, and among mobile populations, remain unvaccinated (zero-dose) or under-immunized. **Objective:** This study aimed to evaluate the prevalence of zero-dose and under-immunization among children living in urban slums in Dar es Salaam and peri-urban areas in the Pwani Region. **Methods:** A cross-sectional household survey was conducted in Ilala and Bagamoyo districts in Dar es Salaam and Pwani regions, respectively, involving 335 mothers or caretakers. The data included socio-demographic variables and immunization status, assessed through Child Health Cards or maternal recall. SPSS version 16 was used for data analysis, employing chi-square tests and multivariate logistic regression to examine relationships between socio-demographic factors, knowledge of immunization, and vaccination adherence. **Results:** The study included 335 caretakers, primarily from Ilala (n=217, 64.8%) and predominantly female (n=310, 92.5%), with more than half not working (n=171, 51.0%) and nearly half having completed primary education (n=159, 47.5%). Among the children, 199 (59.4%) were fully immunized with documentation, 81 (24.2%) were under-immunized, and 25 (7.5%) were zero-dose (had not received any vaccine). The prevalence of zero-dose was therefore 7.5% (n=25/335), while the prevalence of under-immunization was 24.2% (n=81/335). Factors significantly associated with zero-dose status included living in Bagamoyo (AOR = 2.25, 95% CI: 1.10–4.61, p = 0.023), being cared for by a grandparent (AOR = 1.95, 95% CI: 1.16–3.27, p = 0.011), having a birth order of six and above (AOR = 2.38, 95% CI: 1.17–4.84, p = 0.016), being born at home (AOR = 2.45, 95% CI: 1.25–4.80, p = 0.009), lack of a verified immunization card (AOR = 2.68, 95% CI: 1.36–5.29, p < 0.001), and dissatisfaction with immunization services (AOR = 4.65, 95% CI: 1.59–13.60, p < 0.001); whereas high household income above 5,000,001 TZS/month was protective xiv(AOR = 0.24, 95% CI: 0.08–0.75, p = 0.014). For under-immunization, significant predictors included living in Bagamoyo (AOR = 2.15, 95% CI: 1.22–3.79, p = 0.008), being cared for by a father (AOR = 5.13, 95% CI: 1.58–16.63, p = 0.006) or grandparent (AOR = 4.80, 95% CI: 1.02–22.68, p = 0.048), being born at home (AOR = 3.28, 95% CI: 1.03–10.45, p = 0.044), waiting more than three hours at a health facility (AOR = 7.05, 95% CI: 2.09–23.78, p = 0.002), and paying for immunization services (AOR = 6.45, 95% CI: 3.06–13.59, p < 0.001).**Conclusions:** The study found that the prevalence of zero dose accounts for 7.5 7.5% among children, and about 24.2% of children were under-immunized. The cited predictors were residence in Bagamoyo, caretakers' lack of formal education, being cared for by grandparents or male parents, high birth order, home delivery, absence of a verified immunization card, long travel or waiting times at health facilities, dissatisfaction with immunization services, and incurring costs for service

82. Doto, K. (2025). Low-density Lipoprotein Cholesterol Goal Attainment and its Associated Factors among CAD patients attending Jakaya International Cardiac Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Dyslipidaemia is a modifiable risk factor that significantly contributes to the progression of ischemic heart disease, especially amid the growing global burden of non-communicable diseases (NCDs). In Sub-Saharan Africa, where cardiovascular morbidity is increasing, effective secondary prevention is essential to reduce major adverse cardiovascular events (MACE).Low density lipoprotein- Cholestrol(LDL-C) goal attainment and its associated factors remain understudied in Tanzania, despite clear global guidelines advocating for LDL-C reduction in patients with established Atherosclerotic cardivascular disease (ASCVD). **Objective:** We aimed to assess the proportion of coronary artery disease (CAD) patients at Jakaya Kikwete Cardiac Institute (JKCI) who achieved the European Society of Cardiology (ESC) recommended LDL-C target of <1.4 mmol/L after three months of follow-up, and to identify factors associated with goal attainment **Methodology:** A hospital-based prospective cohort study was conducted among patients with CAD using Lipid lowering drugs between September 2024 and February 2025. Baseline data on demographic, clinical and adherence scores were collected using a structured questionnaire and 8-item Morisky Medication Adherence Scale (MMAS-8) which is a validated tool used to assess adherence in chronic conditions representing a standardized and quantifiable measure, allowing for consistent assessment and comparison of adherence levels across different patient populations(1,2). LDL-C levels were measured at baseline and after 3 months. Multivariable logistic regression was used to identify independent predictors of LDL-C goal attainment. A pvalue of < 0.05 was considered statistically significant. **Results:** A total of 214 patients were analysed. The mean age was 63.8 ± 11.5 years; 58.4% were male. The majority, 187 (87.4%), were insured, 99 (46%) reported alcohol consumption, and 28 (13.1%) were current smokers. The average Body mass Index (BMI) was 28.13 kg/m², with nearly half, 98 (48.3%), classified as overweight. The mean baseline LDL-C level was 3.21 mmol/L. At three-month follow-up, 80 patients (37.4%) achieved the ESC-recommended LDLC target of <1.4 mmol/L. Good adherence to lipid-lowering therapy was observed in 46.5% of participants.Multivariable logistic regression identified four independent predictors of LDL-C goal attainment: health insurance status (adjusted odds ratio [aOR] 2.67; 95% CI 1.97–7.29; p = 0.04), good medication adherence (aOR 2.01; 95% CI 1.03–3.90; p = 0.015), polypharmacy (aOR 2.38; 95% CI 1.15–4.94; p = 0.01), and baseline LDL-C <3.3 mmol/L (aOR 9.05; 95% CI 3.89–20.99; p = 0.001). **Conclusion and Recommendation:** LDL-C goal attainment among CAD at JKCI remains sub-optimal, pin pointing clear gaps in adherence and treatment optimiaztion. Good adherence, being insured, and low baseline LDLC levels were independently associated with better goal attainment. Strengthening statin adherence and dose titration protocols at all care levels—alongside promoting dietary modification, physical activity, and other lifestyle interventions—may further improve LDL-C control and reduce future cardiovascular events in this high-risk population.

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83. Edina, O. (2025). Clinicopathological Characteristics and Intervention Outcome in Obstructive Uropathy from Locally Advanced Cervical Cancer. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer remains a leading cause of illness and death among women, especially in low-resource countries like Tanzania. Advanced cases often cause obstructive uropathy, leading to hydronephrosis and renal failure. Although early detection can prevent these complications, late presentation is common. Intervention options such as PCN and DJ stent are effective, but local outcome data is scarce. **Aim of Study:** The study aimed at determining the clinicopathological characteristics and outcomes after Intervention for obstructive uropathy due to locally advanced cervical cancer at Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI). **Methodology:** A retrospective cohort study was conducted at MNH and ORCI, including cervical cancer patients who underwent PCN or ureteric stenting from January 2020 to March 2024. Eligible patients were those diagnosed with obstructive uropathy due to advanced cervical cancer and had complete medical records. Data were collected from medical files, anaesthesia forms, and hospital systems (Jeeva and Inaya). SPSS version 27 was used for analysis. Non parametric tests summarized outcomes; Chi-square or Fisher's exact test determined associations, with $p<0.05$ considered significant. Ethical clearance was obtained from MUHAS IRB, and data confidentiality was maintained. **Results:** Among 159 patients with advanced cervical cancer and obstructive uropathy who underwent surgical treatment for obstructive uropathy, the median age was 55 years. Most had squamous cell carcinoma (89.9%) and presented at FIGO stages IIIB–IV, with common symptoms like difficulty in micturition (54.7%) and oliguria (28.9%). Severe bilateral hydronephrosis (74.2%) and ECOG score 1 (59.1%) were common, with HIV (25.2%) and hypertension (23.3%) as leading comorbidities. Urinary decompression was mainly done via bilateral PCN (76.7%), followed by unilateral PCN (17%) and ureteric stents (6.3%). Postoperative complications occurred in 42.8%, including tube dislodgement (22.8%), hematuria (27.7%), tube leakage (4.7%), and stent migration (60%). Significant associations were found between complications and clinical factors like Hypertension and HIV infection, which were significantly associated with increased risks of surgical complications (RR = 1.24, p = 0.019; RR = 1.26, p = 0.009, respectively). Additionally, unilateral PCN was linked to a lower risk of complications compared to bilateral PCN (RR = 0.78, p = 0.012). **Conclusion:** Most patients with obstructive uropathy secondary to advanced cervical cancer presented at a late stage and underwent bilateral percutaneous nephrostomy (PCN) for urinary decompression. The findings underscore the high disease burden and identify key factors associated with post-surgical outcomes, emphasizing the importance of early detection and enhanced management strategies.
Keywords: *Cervical cancer, obstructive uropathy, percutaneous nephrostomy, ureteric stents, hydronephrosis.*

84. Edward, E. (2025). Prevalence of bad obstetric history and associated factors among pregnant women attending antenatal clinic at Mnazi Mmoja Health Center. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Bad obstetric history (BOH), defined as past poor pregnancy outcomes such as miscarriage, stillbirth, or neonatal death, remains a critical concern in maternal and child health, particularly in low-resource settings like Tanzania. Assessing its prevalence and associated factors

is vital for improving maternal and child healthcare services and outcomes. **Objective:** To determine the prevalence of bad obstetric history and its associated factors among pregnant women attending the antenatal clinic at Mnazi Mmoja Health Centre in Dar es Salaam, Tanzania. **Methods:** A cross-sectional analytical study was conducted among 230 pregnant women attending the antenatal clinic. Participants were selected using simple random sampling. Data were collected using structured questionnaires and antenatal records, covering sociodemographic, obstetric, and clinical factors. Descriptive statistics were used to determine prevalence. Univariate and multivariate logistic regression were used to assess associations, with statistical significance set at $p<0.05$. **Results:** BOH status was confirmed through both self-reports and review of antenatal records The prevalence of bad obstetric history was 22.6% (n=52). The most common adverse outcomes were miscarriages (31.7%) and neonatal deaths (10.0%), and stillbirths accounted for 8.3% of adverse outcomes. In multivariate analysis, having more than five pregnancies (aOR = 27.96; 95% CI: 9.95–78.58; p = 0.001), being Rh-negative (aOR = 3.53; 95% CI: 1.03–12.09; p = 0.045), and the absence of chronic hypertension was associated with a reduced likelihood of BOH (aOR = 0.078; 95% CI: 0.012–0.497; p = 0.007), indicating that hypertension increases the risk of adverse pregnancy outcomes. **Conclusion:** BOH remains common among antenatal clinic attendees. High gravidity, Rh-negative blood type, and hypertension were key predictors of BOH. Risk-based screening should be emphasized to improve pregnancy outcomes.

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85. Edwin C.C. (2025). Implementation Fidelity of Bidirectional Tuberculosis And Diabetes Mellitus Screening Among Healthcare Providers In Public Health Facilities , Ubungo District Dar-Es-Salaam Region. Muhimbili University of Health and Allied Sciences

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Abstract

Background: Diabetes Mellitus (DM) increases the risk of Tuberculosis (TB) threefold and worsens TB outcomes, while TB-induced inflammation can cause hyperglycemia. Tanzania faces a dual burden of these diseases, largely driven by HIV. Although the National TB Guideline recommends bidirectional screening, adherence remains low among healthcare providers offering TB and DM services. **Objective:** To assess the implementation fidelity of bidirectional screening of TB and DM among healthcare providers at public health facilities in Ubungo District, Dar-es-Salaam Region. **Materials and Methods:** A descriptive cross-sectional study using quantitative approach was conducted among 55 TB and 94 DM healthcare providers. Data were collected using questionnaires and analyzed to determine fidelity levels (low or high) for both groups. Then poison regression models using STATA version 16 identified factors associated with screening fidelity in both directions. **Results:** TB screening among DM patients showed a fidelity of 82.98%, and was significantly associated with teamwork (aPR=2.28; 95% CI: 1.11–7.12; p=0.031), provider self-efficacy (aPR=2.29; 95% CI: 1.04–5.02; p=0.024), and hospital-level settings (aPR=3.60; 95% CI: 1.52–8.50; p=0.004). Conversely, DM screening among TB patients had a fidelity of 65.45%, which was also associated with records and documentation (aPR=8.61; 95% CI: 2.90–25.62; p=0.046), perceived benefits of guideline use (aPR=3.54; 95% CI: 1.15–10.83; p=0.013), and training (aPR=0.48; 95% CI: 0.27–0.84; p=0.010), which negatively influenced fidelity. Moreover, low fidelity was observed in both directions: 17.02% for TB screening in DM clinics

and 34.55% for DM screening in TB clinics. **Conclusion:** Key factors influencing bidirectional screening fidelity were teamwork, provider self-efficacy, effective documentation, training and relative advantage in guideline use. Despite relatively high screening levels, gaps still remain, emphasizing the need for improved training, stronger coordination, and better record systems to enhance integrated TB–DM care.

86. Eladi, J. (2025). Perceptions and experiences with physical restraints among patients receiving psychiatric care at Muhimbili Hospital, Dar es Salaam, Tanzania. Muhimbili university of health and Allied Sciences

Abstract

Background: Physical restraint remains a common intervention in psychiatric settings worldwide, employed primarily to prevent harm during episodes of acute agitation or aggression. Despite its perceived necessity, physical restraint is associated with significant ethical, psychological, and physical consequences. In Tanzania, there is limited evidence on how psychiatric patients perceive and experience such interventions, which hinders the development of patient-centered and trauma-informed care practices. **Objective:** This study aimed to explore the perceptions and lived experiences of physical restraints among patients receiving psychiatric care at Muhimbili National Hospital (MNH), Dar es Salaam, Tanzania. **Methodology:** An exploratory qualitative design was employed. Fourteen adult psychiatric patients with a history of physical restraint at MNH were purposively selected. Data were collected through in-depth interviews, transcribed verbatim, and analysed thematically. The Trauma-Informed Care (TIC) model guided the interpretation of findings. **Results:** Seven major themes emerged: physical effects, psychological trauma, reasons for restraint, mixed perception, negative perception, positive perception, and patient recommendations. Participants reported physical pain, restricted toileting, and long-lasting emotional distress. Restraints were often perceived as punitive, poorly explained, and lacking follow-up psychological support. While some acknowledged the necessity of restraint under extreme circumstances, most emphasized a need for alternative interventions, compassionate communication, and institutional reforms. **Conclusion:** Physical restraints are largely perceived as dehumanizing and traumatic by psychiatric patients at MNH. The absence of adequate communication and post-restraint support exacerbates patient distress. These findings underscore the need for trauma-informed, ethically grounded, and patient-centred psychiatric care policies in Tanzania.

87. Elias, E. (2025). Prevalence of posttraumatic stress disorder and associated factors in Secondary school adolescent refugees in Nduta Camp, Kigoma, Tanzania. Muhimbili university of health and Allied Science.

Abstract

Background: Posttraumatic stress disorder (PTSD) is a mental health condition caused by traumatic experiences and affects a large number of refugee adolescents. Secondary school-aged refugees are more vulnerable, as PTSD can disrupt their development across biological, psychological, and social domains, which may impact their academic performance, leading to low

scores. Symptoms include intrusive thoughts, avoidance, mood changes, and heightened arousal. **Objectives:** To determine the prevalence of posttraumatic stress disorder and its associated factors among secondary school adolescent refugees in the Nduta camp, Kigoma region. Methodology: From May to June 2025, an analytical cross-sectional study was conducted among 317 secondary school refugee adolescents in Nduta Camp to determine PTSD symptoms. PTSD symptoms were assessed using the University of California, Los Angeles Posttraumatic Stress Disorder Reaction Index for the Diagnostic and Statistical Manual of Mental Disorders version five (UCLA-PTSD-RI-5). Social support, school connectedness, and food insecurity were evaluated using the Oslo Social Support Scale (OSSS-3), School Connectedness Scale, and the Household Hunger Scale (HHS), respectively. Data analysis was performed using SPSS version 27. The analytical approach included descriptive statistics, followed by bivariate analysis (with a significance threshold of $p < 0.25$) and multivariable analysis (with $p < 0.05$ and 95% confidence intervals), both conducted using a modified Poisson regression model **Results:** Of the 317 adolescent refugees in Nduta Camp, 234 (73.8%) screened positive for PTSD symptoms. Two-thirds were male, 210 (66.2%), and more than half were late-age adolescents, 173 (54.5%). Middle-aged adolescents (15–17 years) had 1.14 times the adjusted PTSD prevalence of late adolescents (≥17 years) (aPR = 1.144, 95% CI: 1.020–1.280, p = .002). Female adolescents had 1.92 times the adjusted PTSD prevalence of males (aPR=1.929, 95% CI: 0.864–0.999, p=.046). Trauma exposure was common, with nearly four in five adolescents, 247 (77.9%), reporting at least one traumatic experience. Among them, over half, 171 (53.9%), had reported physical, sexual, or emotional abuse, while 76 (23.9%) reported other forms of trauma. However, Participants could report >1 trauma type. Trauma exposure was strongly associated with PTSD (aPR=1.259, 95% CI: 1.148–1.382, p< .001). Over four-fifths, 263 (83.0%), reported low school absenteeism, and about a quarter, 81 (25.6%), reported weak school connectedness. Just over a third, 122 (38.5%), had low food security, which was significantly linked to the likelihood of PTSD (aPR=1.92, 95% CI: 1.013–1.176, p=.021). About two-thirds, 213 (67.2%), rated their social support as moderate. **Conclusion:** The study revealed that PTSD was significantly more likely in middle adolescents, females, those who reported food insecurity, or trauma exposure. Study findings highlight an urgent need for comprehensive trauma-informed mental health services targeting adolescent refugees in Nduta Camp and similar settings. Screening for PTSD should target all adolescents, but specifically those with food insecurity, middle-aged adolescents, trauma exposure, or females. Multilayered mental health interventions addressing both psychosocial and socioeconomic determinants of well-being are needed in this population subgroup.

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88. Elias, M.M. (2025). Factors associated with survival following percutaneous transhepatic biliary drainage in malignant biliary obstruction at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Malignant biliary obstruction causes high morbidity and mortality. Percutaneous transhepatic biliary drainage (PTBD), is a minimally invasive procedure used to lower bilirubin levels, ease symptoms, and improve quality of life. Despite its growing use, data on survival outcomes and associated factors post-PTBD in Tanzania remain limited. **Objective of the study:**

To determine the factors associated with survival following percutaneous transhepatic biliary drainage in malignant biliary obstruction at Muhimbili National Hospital. **Methodology:** This retrospective cohort study involved patients who underwent Percutaneous Transhepatic Biliary Drainage (PTBD) for malignant biliary obstruction from January 2021 to December 2023 at Muhimbili National Hospital. Data on patient demographics, comorbidities, symptoms, cause and type of obstruction, and laboratory results before and after PTBD were collected, and survival times were obtained. Statistical significance was set at $p < 0.05$. Kaplan-Meier curves were used to illustrate survival probabilities, and Cox's proportional hazard model was employed to assess the relationship between baseline factors and survival time. Results: The mean patient age was 57 years, 53.5% were female. Most patients (78.9%) had no comorbidities, and the majority had primary tumors causing obstruction, especially cholangiocarcinoma (71.1%) and pancreatic head tumors (19.7%). The PTBD technical success rate was 100%. A ≥20% reduction in bilirubin at one-week post-PTBD was seen in 62.5% of patients. The complication rate was 38.7%, primarily minor (peri-tubal leakage in 37.3%). The median survival time was 49 days, with survival rates of 64.1%, 35.2%, 22.5%, and 13.4% at 1, 3, 6, and 12 months, respectively. In the multivariate Cox regression analysis, post-PTBD oncology treatment was significantly associated with improved survival ($p = 0.015$), corresponding to an 89% reduction in the risk of death compared to patients who did not receive such treatment. **Conclusion:** This study highlighted the effectiveness and safety of PTBD as a palliative treatment for malignant biliary obstruction in resource-limited settings, while emphasizing the need for enhanced cancer care strategies, including better access to diagnosis and oncologic treatments.

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89. Eligi, F. (2025). Periodontal status of abutment and non-abutment teeth among patients with acrylic removable partial dentures attending MUHAS and MNH-OPD Dental Clinics in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Periodontal diseases are among the common oral conditions which affect both developed and developing countries. Periodontal diseases affect the periodontium, which includes supporting structures. It is a major public health concern due to its high prevalence and because it may ultimately lead to tooth loss and disability accounting for a great proportion of edentulism in the general population. Acrylic Removable Partial Dentures (ARPDs) have been used as a favorable option to replace lost teeth especially in low-income countries because of its economic and aesthetic quality and it is easy to adjust. However, it has been associated with increased risk of developing periodontal diseases on teeth adjacent to the prosthesis due to ease accumulation of plaque. **Aim:** This study aimed to assess the periodontal status of abutment and non-abutment teeth among patients with ARPD attending MUHAS dental clinic and MNH-OPD (Upanga) Dental Clinic in Dar es salaam. **Methodology:** This was a cross-sectional quantitative study conducted at the MUHAS Dental Clinic and MNH-OPD (Upanga) Dental Clinic in Dar es Salaam, Tanzania. The study involved 143 participants with acrylic removable partial dentures (ARPDs) who were selected using convenience sampling. Data collection tools included a structured questionnaire which was used to collect information on Sociodemographic characteristics, denture and oral hygiene related factors and clinical periodontal examination form which was used during the

assessment of periodontal parameters which were plaque, calculus, gingival bleeding on probing, gingival recession, probing periodontal pocket and clinical attachment loss. Data collected was analyzed using STATA version 17.0 and IBM SPSS Statistics for Windows, Version 26.0. Data analysis included generation of frequency tables, means, cross-tabulations, simple and multiple linear regression. Statistical tests employed were chi-square test and t-tests. P value was set at <0.05. **Results:** A total of 143 participants were enrolled (88.8% response rate), aged 21 to 85 years (mean age of 53.6 ± 12.6 years) and 62.2% were females. Majority (62.2%) of the participants wore upper dentures only and 51.8% had worn them for over three years. Clinical examination of 1,607 teeth revealed that the prevalence of surfaces with plaque, calculus, and gingival bleeding on probing was 38.7%, 13.1%, and 8.8%, respectively. Furthermore, abutment teeth had significantly lower plaque, calculus, and gingival bleeding scores than non-abutment teeth ($p < 0.001$). However, abutment teeth showed significantly greater gingival recession and clinical attachment loss, but lower probing pocket depth ($p < 0.001$). Self-reported tooth loss during denture use was 20.3%. The overall prevalence of Periodontitis and gingivitis was 55.9% and 35.7% respectively. Older age (>50 years) was consistently associated with worse periodontal parameters ($p < 0.05$). Female participants had significantly lower scores for all periodontal parameters except gingival bleeding (($p < 0.05$). Participants with higher education had better periodontal outcomes compared to their counterparts ($p < 0.05$). Interestingly, participants whose last dental visit was more than one year ago exhibited better periodontal parameters, including lower probing pocket depth, recession, and clinical attachment loss, compared to those with dental visit of less than a year ($p < 0.05$). Denture use for more than 36 months was linked to increased calculus, recession, and clinical attachment loss in abutment teeth ($p < 0.05$). **Conclusion and recommendation:** Abutment teeth demonstrated better hygiene indicators (lower levels of plaque and calculus); however, they also exhibited more severe tissue destruction, such as increased gingival recession and attachment loss, compared to non-abutment teeth. Findings also underscore that periodontal status in both abutment and non-abutment teeth is influenced by age, sex, education level, denture duration, and oral hygiene practices. In light of these findings, routine periodontal evaluation should be integrated into the care of patients with ARPDs, with equal attention to both abutment and non-abutment teeth.

90. Elisha, E. (2025). Factors affecting the implementation of microbial larviciding for malaria vector control in Shinyanga, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Malaria poses global health and economic challenges, particularly in sub-Saharan Africa. There is scanty information on the implementation of microbial larviciding, as well as coverage of this malaria intervention in Shinyanga. This study explored the coverage of larviciding intervention and factors affecting the implementation of microbial larviciding for malaria vector control in a semi-urban environment in Shinyanga Municipality This study employed a mixed method approach where in the quantitative approach, a questionnaire tool was administered. Qualitatively, in-depth interviews were carried out with key informants (KI) to gather data on specific themes of

the study. The data was collected between 3rd and 30th June 2024. Quantitative data was analysed by SPSS software version 29 through descriptive analysis, χ^2 and ordinal regression analysis. Qualitative data was analysed by summarizing the recorded interviews. A total of 398 community members and 11 KI provided responses to the questionnaire and interviews respectively. Larviciding was implemented at a low rate (39%). The majority 39.9% (148) and 33.4% (124) respectively were neutral and disagree that a reasonable number of community members participated in mapping of larviciding sites. This result was statistically significant across rural-urban lifestyle of respondents' locations (χ^2: *df*=4, *pv*<0.005) and across wards (χ^2: *df*=64, *pv*<0.005). KI interviews indicated limited coverage of area and people involved in the programme. Less than 20% (52) of respondents indicated to be knowledgeable on identifying the larviciding sites and the larviciding activity. Over 33% (124) and 44.4% (189) of respondents were motivated by the learning process for larviciding and the monetary payment will motivate them to participate in Community Owned Resource Persons (CORPs) to do larviciding respectively. KI interviews indicated hardship in implementation based on the misconception and wrong beliefs on the programme, inadequate funding and knowledge. Flooding affected most the larviciding (41.6% (154)) followed by distance to larviciding sites (28.0% (101)). In **conclusion:** the larviciding in Shinyanga Municipality was implemented at a low rate with a non-strategic approach. Package of the larvicide need downsizing to the family level uptake. Further research is needed to assess the extent and nature of traditional practices affecting the implementation of health programmes.

91. Elisha, S. (2025). Health Financing Mechanisms and Health-Seeking Behavior among Type 2 diabetes mellitus patients in Regional Referral Hospitals, Dar es Salaam, Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Type 2 Diabetes Mellitus (T2DM) prevalence is growing due to urbanization, increased aging populations, and lifestyle changes. Despite the available number of existing health insurance schemes, such as the National Health Insurance Fund (NHIF) and Community Health Fund (CHF), the majority of Tanzanians rely on out-of-pocket (OOP) payment as a mode of payment to access healthcare services. This contributes to financial barriers in the utilization of healthcare services. Poor health-seeking behavior (HSB), such as delayed clinic visits and medication non-adherence, contributes to non-standard T2DM management. However, the relationship between financing mechanisms and HSB remains unknown in Dar es Salaam's referral hospitals. **Aim:** This study aimed to assess the association between health financing mechanisms and health-seeking behavior among T2DM patients in regional referral hospitals in Dar es Salaam, Tanzania. **Materials & Methods:** A cross-sectional study was conducted among 321 adult T2DM patients attending Temeke, Amana, and Mwananyamala hospitals in Dar es Salaam. Participants were selected using systematic random sampling. Data were collected through structured questionnaires and medical record reviews, focusing on socio-demographic factors, health financing mechanisms, health-seeking behaviors (clinic attendance, MMAS-8 medication adherence, diagnostic use), and perceived barriers to care. Data were cleaned in Excel and analyzed using SPSS version 25. Descriptive statistics summarized key variables. Chi-square and Fisher's exact tests assessed bivariate associations, while logistic regression identified

adjusted associations, controlling for confounders. T2DM patient's ratings of health care access barriers (on a 5-point scale) were summarized using median values and barriers were ranked accordingly to identify those perceived as most severe. Results: A total of 307 adult T2DM patients were analyzed. Most participants were under 60 years (60.3%), female (63.8%), married (72.0%), had formal education (93.8%), and reported low income (71.0%). Out-of-pocket (OOP) payment was the most common health financing mechanism (55.7%), followed by NHIF (33.9%), CHF (8.5%), and employer-based insurance (2.0%). Among the insured, only 30.1% reported full coverage for T2DM-related services, with the majority experiencing partial coverage. Bivariate analysis showed significant associations between financing mechanisms and both medication adherence ($p = 0.02$) and use of alternative medicine ($p = 0.002$). However, multivariate logistic regression revealed no statistically significant association between financing method and adherence (aOR = 0.63; 95% CI: 0.39–1.02; $p = 0.060$). Instead, higher income was independently associated with better adherence (aOR = 1.75; 95% CI: 1.02–3.00; $p = 0.041$). Routine glucose checks, clinic attendance, and use of traditional medicine were not significantly influenced by financing mechanisms in the adjusted model. The most frequently reported barriers to care included high medication costs (53.4%), transport difficulties (45.6%), and long clinic wait times (37.1%), with transportation and waiting time ranked as the most severe barriers. Conclusion: Out-of-pocket payment remains the predominant method of healthcare financing among T2DM patients, with limited and often partial insurance coverage. While income level significantly influenced medication adherence, health financing mechanisms had a limited independent effect. Persistent system-level barriers, such as high costs and access constraints, affected all patients regardless of financing method. Expanding NHIF benefits and subsidizing premiums for low-income patients could enhance financial protection. Integration of iCHF with NHIF may improve coverage equity. Strengthening primary care capacity, deploying mobile outreach clinics, and addressing health literacy and cultural beliefs through community engagement are recommended. Further research should explore underlying non-financial factors affecting adherence among insured patients.

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92. Eliuta, C. (2025). Awareness, perceptions, and beliefs on mental illness among religious leaders in Kinondoni district in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Mental illness is a public health concern. It is still widely stigmatized and little understood, though. Religious leaders in Tanzania play a significant role in helping their followers with mental health issues, however, little is known about their awareness, perceptions and beliefs. **Objective:** The objective of this study was to explore awareness, perceptions, and beliefs regarding mental illness among religious leaders in Kinondoni District, Dar es Salaam, Tanzania. **Methods:** This was an explorative qualitative case study. Twenty participants were chosen purposively for this study. Data were gathered through in-depth interviews. Thematic analysis was used to analyze the data. **Results**: Three main themes identified in this study were awareness of mental illness, perceptions of mental illness, and beliefs about its causes and treatment. Generally,

religious leaders were aware of mental illness. Awareness was mostly gained through their theological trainings, personal and community experience and ministry experience during player and counselling. However, many did not have detailed awareness on specific mental health disorders and their symptoms. In terms of perception, mental illness was often seen as both a spiritual and medical issue. Spiritual explanations of mental illness, such as demonic possession and curses, were common. Despite these beliefs, some religious leaders acknowledged the role of social and biological factors contributing to mental illnesses. Regarding beliefs, most participants favored spiritual interventions like prayers and fasting. They also recognized the need for medical treatment and referred cases to health facilities when necessary. The findings highlight the influential role of religious leaders and the gaps in addressing mental health illness in their communities. **Conclusion:** While religious leaders have general awareness of mental illness; their limited awareness on specific disorders hinders effective support. Their dual belief in both spiritual and medical causes shapes how they approach individuals, often balancing prayer with referrals to health services. Strengthening their mental health awareness is crucial to help them recognize conditions early, make appropriate referrals, and collaborate with professionals. Such efforts can also reduce stigma and promote healthier, more supportive communities.

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93. Emaely, T. (2025). Association between health insurance status and healthcare services utilization of rural population in Hai district. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Nearly half of the population globally is reported to be unable to access basic health services and one of the key reasons is the burden of healthcare costs. Less than 50% of the entire population in Africa is able to access basic quality health services where the worst globally is in Sub Saharan Africa with less than 42.56%. Heath insurance has been stated by WHO to alleviate financial hardship and improve on utilization of healthcare services. Hence, this study is aiming to determine the association between health insurance and healthcare utilization **Objective:** The study aims to determine the association Between Health Insurance Status and Healthcare Services Utilization of Rural Population in Hai District**. Methods*:*** Cross-sectional study was conducted with multistage sampling for 494 households. The dependent variable was healthcare services utilization and the key independent variable was insurance status. Descriptive statistics summarized participant characteristics. Bivariate and multivariable logistic regression used to assess the magnitude of association. A p-value of <0.05 was considered statistically significant. **Results**: 26.9% reported to utilize healthcare services, with OPD (30.6%) more common than IPD (12.6%). 18.2% were covered by insurance, and utilization was significantly higher among the insured (43.3%; $p < 0.001$). Multivariable logistic regression revealed that health insurance coverage (AOR = 2.24; 95% CI: 1.22–4.11; $p = 0.010$), marital status (married: AOR = 2.74; 95% CI: 1.41–5.30; $p = 0.003$), higher income (>TZS 500,000: AOR = 4.27; 95% CI: 2.03–8.99; $p < 0.001$), recent illness (AOR = 2.91; 95% CI: 1.80–4.73; $p < 0.001$), and chronic medication use (AOR = 3.38; 95% CI: 1.77–6.48; $p < 0.001$) were significantly associated with healthcare services utilization. **Conclusion**: Health insurance coverage was significantly associated with increased healthcare service utilization among the rural population at the study setting. Additionally, marital

status, higher household income, recent illness, and chronic medication use independently influenced healthcare utilization. It is important to expand insurance coverage and address economic barriers may enhance equitable healthcare access and improve health outcomes in rural populations.

94. Emmanuel, J.J. (2025). Assessment of the factors for prolonged ICU stay following cardiac surgery with cardiopulmonary bypass at Jakaya Kikwete cardiac Institute, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Prolonged ICU stay is a common complication after cardiac surgery, often resulting from factors like systemic inflammation, hemodynamic instability, and organ dysfunction triggered by CPB. It affects 15–30% of patients globally and is linked to worse outcomes and higher healthcare costs. Identifying its contributing factors can help healthcare providers implement targeted interventions to reduce complications and improve outcomes. **Aim of the study:** Assessment of the factors associated with prolonged ICU stay following cardiac surgery with Cardiopulmonary Bypass (CPB) among adults at JKCI hospital in Dar es Salaam, Tanzania. **Methodology:** A cross-sectional study at the Jakaya Kikwete Cardiac Institute in Dar es Salaam involving 52 adults undergoing cardiac surgery with cardiopulmonary bypass. Data on pre-, intra-, and post-operative factors were collected using a structured form and analyzed using IBM SPSS version 25. **Result:** Among 52 patients undergoing cardiac surgery with CPB, 78.8% had a prolonged ICU stay (>3 days), with a mean duration of 6.02 ± 3.35 days. Significant factors included NYHA class III/IV (p=0.004, aPR=1.235, 95% CI(1.070-1.425)), longer CPBT (p=0.045,aPR=1.269,95% CI(1.005-1.601)) and ACCT (p=0.004, aPR=1.388, 95% CI(1.111-1.733)), prolonged ventilation (p=0.005, aPR=1.155, 95% CI(1.044-1.277)), and postoperative bleeding (p=0.014, aPR=1.115, 95% CI(1.022-1.216)). Other variables showed no significant association with ICU stay.**Conclusion and recommendation:** Prolonged ICU stay (78.8%) was common after cardiac surgery and was primarily influenced by extended CPB and ACCT times, which contributed to more prolonged mechanical ventilation and increased postoperative bleeding. This highlights the importance of optimizing intraoperative care and early risk identification to improve patient outcomes.

95. Fazal, N. S. (2025). Appropriateness of adult head computed tomography scan at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Computed Tomography (CT) of the head is a widely used imaging modality for evaluating neurological conditions such as trauma, stroke, and intracranial pathologies. However, inappropriate utilization of CT scans can overburden healthcare systems, particularly in resource-limited settings like Tanzania. Assessing the appropriateness of CT use is vital to optimizing

healthcare delivery and resource utilization. **Objective:** This study aimed to determine the magnitude and predictors of the appropriateness of adult head CT scans at Muhimbili National Hospital (MNH) in Tanzania by examining clinical indications, adherence to imaging guidelines, and diagnostic outcomes. **Methodology:** A hospital-based-cross-sectional study was conducted among adult patient aged 18 years and above referred for head CT scans at MNH between January and March 2025. Data on patient demographics, clinical indications, referring specialists, and imaging findings were obtained from medical records and the radiology database using a structured tool. Appropriateness of scans was assessed based on the American College of Radiology (ACR) imaging guidelines. Descriptive statistics were used for socio-demographic and clinical variables, while chi-square and logistic regression analyses were conducted to identify predictors of appropriate CT use. **Results:** Of the 158 head CT scans analyzed, Male patients constituted 68.4% of the study participants and female patient constituted 31.6% of the study, 122 (77.2%) were appropriate, while 36 (22.8%) were inappropriate. Trauma (44.9%) and altered mental status (32.9%) were the most common indications. Logistic regression analysis showed that trauma (AOR=7.865,95% CI-2.45-25.248, p=0.001) significantly predicted appropriate CT use, while seizures were inversely associated with inappropriate use (AOR=0.313,95% CI-0.097-1.013, p=0.047). **Conclusion:** While most head CT scans at MNH were appropriate, a notable proportion (22.8%) were not, especially among older adults and female patients. Trauma and seizure presentations were significantly associated with appropriate imaging, while non-specific symptoms such as headache and altered mental status showed a higher odd of inappropriate use. **Recommendation:** Effort should focus on promoting the use of imaging referral guidelines, continuous clinical training, and careful clinical assessment before ordering head CT scans.

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96. Fedrick, G (2025). Assessment of Adverse Events Following COVID-19 Vaccination and Associated Factors Among Healthcare Workers in Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: COVID-19 vaccines were introduced in the healthcare system for use as emergencies following the World Health Organization recommendations to curb the pandemic, with limited evidence on their safety profile. Healthcare workers being at the forefront in the management of COVID-19 cases, were among the priority groups for early vaccination. Due to differences in the pattern of adverse events following immunization (AEFI) across the studied population, studies are required to establish its prevalence and severity, as well as associated factors. **Objectives:** To determine the prevalence of COVID-19 vaccination AEFI and associated factors among HCWs in Tanzania. **Methodology:** A cross-sectional study was conducted across the country targeting health care workers. Data were collected using a structured questionnaire. Data were analyzed using SPSS version 27 with descriptive analysis for participants' characteristics and the type of AEFI. Modified Poisson regression was used to determine factors associated with AEFI. **Results:** A total of 893 HCWs, with the majority aged 20–40 years, 681 (76.3%), and male 475 (53.2%), participated in this study. The prevalence of AEFI was 83.3%. The most reported adverse events were neurological symptoms, 424 (47.5%). Most AEFIs were

systemic 452 (60.7%) and occurred within 24 hours of vaccination 379 (50.7%), while long-term adverse events were infrequent 50 (5.6%). The occurrence of AEFI was associated with alcohol consumption (aPR=1.84, 95% CI: 1.47–2.31, p<0.001), prior receipt of other vaccines (Hepatitis, influenza and Tetanus) (aPR=1.444, 95% CI: 1.17–1.79, p=0.001), whereas receiving a single dose was associated with fewer AEFIs (aPR=0.506, 95% CI: 0.38–0.68, p<0.001). **Conclusion and Recommendation**: The prevalence of AEFI among healthcare workers was high. Systemic and short-term adverse events were commonly reported among healthcare workers following COVID-19 vaccination, while long-term events were rare. Alcohol use, prior vaccination for other diseases (Hepatitis, influenza, and Tetanus), and receiving multiple COVID-19 doses were associated with increased AEFIs, whereas receiving a single dose was effective to protect them against COVID-19.

97. Felician, I. (2025). Effect of Three Rounds Indoor Residual Spraying on Malaria Morbidity in Villages Near North Mara Gold Mine, Tarime District Council, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malaria remains a life-threatening disease in Tanzania, where 93% of the mainland population lives in malaria-prone areas. In the Mara Region, incidence rates reached 100–150 per 1,000 in 2021. In response, in August 2021, the North Mara Gold Mine and Tarime Council Health Team initiated an indoor residual spraying (IRS) program in areas near the mine site. However, the effect of IRS on malaria morbidity remains unassessed, and data on its impact remain scanty. **Study Objective:** The study assessed the effect of IRS on malaria morbidity in the catchment areas of the North Mara Gold Mine, Tarime, Tanzania. **Methodology:** An analytical cross-sectional study using a quantitative approach was conducted among 193 households, randomly selected, and heads of households represented the households from villages near the North Mara Gold Mine. Data were collected through structured face-to-face questionnaires and malaria morbidity records from the District Health Information Software (DHIS). Analysis was done using SPSS version 27, with means and standard deviations for continuous variables, frequencies and percentages for categorical data, and logistic regression to assess associations at a significance level of $p < 0.05$. Malaria DHIS2 data (2020-2023) were analyzed by examining trends in baseline data and the post-IRS implementation period. **Result:** A total of 193 household heads were surveyed, with 72% of participants being male, a mean age of 43.5 ± 14.5 years (range: 20–87 years). A self-reported malaria prevalence was 52.8%, and DHIS2 data (2020–2023) showed inconsistent IRS effectiveness across health facilities, with malaria positivity rates rising from 48.9 before IRS to 86.8 after IRS at Nyarwana Health. Factors affecting IRS efficiency included poor housing conditions (e.g., cracked walls [AOR: 0.3], leaking roofs [AOR: 0.2]) and low monthly income [AOR: 0.1]; while factors improving outcomes included spending on bed nets [AOR: 1.6], mosquito sprays and coils [AOR: 5.6], and larger family sizes [AOR: 1.9]. **Conclusion and recommendation:** Despite IRS implementation, malaria prevalence remained high, with effectiveness influenced by household size, housing conditions, and education level. Better outcomes were seen with screened windows and adherence to pre-spray instructions. Enhancing education, improving housing conditions, and using bed nets and sprays can strengthen the IRS's impact.

98. Forchin, A. N. (2025). Concordance between clinico-radiological and histopathological diagnoses of benign tumours of the jaws among patients attending the Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Benign tumours of the jaws are overwhelmingly more common than malignant tumours. The diagnosis of benign tumours of the jaws is based on various presenting clinical and radiological features, as well as the histopathological features of the lesion. Clinically, benign jaw tumours usually have an insidious onset, grow slowly, and present with signs and symptoms such as painless or painful facial swellings, facial deformity, and tooth displacement. Radiologically, they present as radiolucent or radiopaque lesions but may be mixed. They can be associated with displacement of adjacent teeth, root resorption, and cortical bone expansion may be noted. These clinical and radiological features usually overlap. Thus, the histopathological study of the lesion is necessary for definitive and final diagnosis**. Aim:** To determine the concordance between clinico-radiological and histopathological diagnoses of benign tumours of the jaws. Material and **methods:** All patients attending the MNH, with clinico-radiological diagnoses suggestive of benign tumours of the jaws during the study period, who consented, were included. A thorough clinical examination was carried out, and all clinical parameters were noted in a special clinical form. An orthopantomographic (OPG) was done, and all radiological features of the tumour were recorded in a special form. An incisional biopsy was done, and the sample was sent to the central pathology laboratoey (CPL) for analysis, from which the histological diagnosis was obtained. Data was entered and analysed using SPSS software version 27.0. The correlation between the clinico-radiological and histopathological diagnoses was calculated using the Cohen test. P-value.

99. Francis, A.M. (2025). Factors Affecting Gingival Health Status in Patients Under Fixed Orthodontic Appliance Treatment at the MUHAS Dental Clinic in Tanzania. Muhimbili University of Health and Allied Sciences

Abstract

Background: Orthodontic patients often seek treatment to enhance aesthetics and boost self-esteem, particularly through the correction of anterior tooth malalignment. However, fixed orthodontic appliances (FOA) significantly compromise oral hygiene by impairing natural cleaning mechanisms and promoting plaque accumulation. This biofilm build-up contributes to gingival inflammation and, if left unmanaged, can progress to periodontitis. The risk is compounded by both modifiable factors, including oral hygiene habits, smoking, systemic conditions and non-modifiable factors such as age, sex, and socio-economic status. Although these associations are well-documented in general populations, their specific impact on orthodontic cohorts remains unclear. **Aim:** To assess the factors affecting gingival health status among patients undergoing fixed orthodontic appliance treatment at the MUHAS Dental Clinic. **Methods:** An analytical cross-sectional study was conducted at the Orthodontics, Pedodontics, and Community Dentistry (OPCD) clinic of Muhimbili University of Health and Allied Sciences (MUHAS) in Dar

es Salaam. The study involved 100 adolescents and adults aged 12–35 years who have been on FOA treatment for three months and initially presented without periodontal diseases. Participants were consecutively selected as they presented to the clinic and were assessed through structured questionnaires and a clinical examination using a modified WHO Community Periodontal Index (CPI), which assessed six surfaces of each index tooth. Data on oral hygiene practices, age, sex, education, and socio-economic status were collected. Gingival health status was assessed based on the presence or absence of plaque and bleeding on probing on six surfaces of each of the WHO CPI index teeth. Data were analysed using SPSS 27.0. Descriptive statistics were obtained, and bivariate analysis was done using the Chi-square test and Pearson's correlation, with a significance level set at $p < 0.05$. **Results:** A total of 100 child or adult patients participated in this study. Males were 52%, those aged below 18 years were 57%, and the majority of study participants (88%) were urban dwellers. More than half of the participants (56%) had a secondary education level or above, with less than half (44%) of the study participants belonging to a high wealth index group. Thirty-three percent of participants developed gingivitis, and the majority (96%) had a poor oral hygiene status three months post-FOA. All patients reported to brush their teeth (100%), but only 31% used the recommended combined sulcular and vertical strokes brushing technique. About 67% of study participants brushed for over three minutes, while very few, 5% and 11% used interdental brushes and dental floss, respectively. Only 13% used mouthwash. The majority of participants (94%) reported using toothpastes, and two-thirds (67%) reported having received professional dental check-ups. Overall, the percentage of participants with gingivitis three months post FOA was 33%, being younger (63%), female (54%), with secondary education (51%), and having a high wealth index (51.7%) showed slightly higher scores of gingivitis than their counterparts; however, this difference was not statistically significant. Accordingly, the findings showed that there was a strong correlation between plaque score and gingivitis three months post FOA, with a Pp-value of < 0.001. Also, the study showed a correlation between having gingivitis and higher plaque scores, with a Pearson correlation coefficient of $r = 0.342$. This indicates a moderate positive relationship between plaque accumulation and gingival inflammation. **Conclusion:** One-third of the participants developed gingivitis three months after the placement of fixed orthodontic appliances (FOA), which was significantly associated with plaque scores, which in turn could be related to the participants' inadequate toothbrushing techniques and poor adoption of interdental cleaning aids. **Recommendations:** Orthodontic treatment protocols should intensely include comprehensive preventive strategies, including individualised oral hygiene instructions, the promotion of evidence-based brushing techniques, and the routine use of interdental cleaning aids. Continued education and reinforcement of these techniques are essential to mitigate the periodontal risks during FOA treatment. Further, longitudinal studies are recommended to validate these findings over extended treatment durations.

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100. Frednand, R. (2025). Prevalence of Delirium and Associated Factors among Adult Patients admitted in Intensive Care Units at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Delirium remains a major concern among critically ill patients and is associate with increased morbidity and mortality as well as difficult therapeutic decisions in intensive care units. However, it is often overlooked, and there is limited information regarding its risk factors, particularly in resource-constrained countries like Tanzania. Understanding the risk factors predisposing to delirium is essential for quality improvement and better patients'outcomes. Aim of the study: To determine the prevalence of delirium and associated factors among adult patients admitted to intensive care units at Muhimbili National Hospital. **Materials and Methods:** A facility-based cross-sectional study was conducted among 213 adult patients in intensive care units. Consecutive sampling was used to obtain the participants. The confusion assessment method was used to diagnose delirium among study respondents. Data analysis was done using statistical software (Stata version 18). A descriptive analysis was carried out to summarize the numerical variable using the mean and the standard deviation, whereas the categorical data was summarized using frequency and percentage. The associations were estimated using both bivariate and multivariate logistic regression analysis. **Results:** Total of 213 adult patients admitted to the intensive care units were included in the analysis. The mean age was 52 years with (SD=19 years). The prevalence of delirium was 20.7% (n=44) with a 95% confidence interval between 15.8% to 25.7%. There was statistically significant association between delirium and a history of substance. (AOR=4.76, 95%CI: 1.05- 21.60, p=0.043). Similarly, RASS score ≥1 within the first hour (AOR=7.23, 95%CI=2.66- 19.69, p0.05). **Conclusion:** The study's findings reveal a notable prevalence of delirium among ICU patients, approximately 21%, which aligns with global perspectives for critically ill patients not under mechanical ventilation. This prevalence indicates a substantial presence of delirium within the studied cohort, albeit lower compared to rates reported in certain regions such as Spain and India. These differences underline the dynamic nature of delirium epidemiology across diverse healthcare environments and patient populations.

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101. Fue, E. G. (2025). Assessment of the operational feasibility of integrating Kangaroo mother care education into antenatal care services at Muhimbili National Hospital, Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Integrating Kangaroo Mother Care (KMC) education into antenatal care (ANC) services offers an opportunity to prepare mothers for early skin-to-skin contact and exclusive breastfeeding, essential for improving neonatal outcomes. Many mothers are unaware of KMC benefits, delaying its initiation and reducing its effectiveness. The study explored the feasibility of integrating KMC education into ANC by assessing healthcare providers' readiness, technical requirements, and alignment with existing workflows to address these challenges and enhance neonatal care. **Aim/Broad Objective:** The study assessed the operational feasibility of integrating KMC education into ANC services at MNH. This included evaluating healthcare providers' readiness, technical adequacy, and organizational alignment within ANC workflows for the effective implementation of KMC education. **Materials & Methods:** An exploratory qualitative case study design was utilized for this research. Key informant interviews was conducted with healthcare providers at MNH through purposive sampling. Participants included obstetricians, midwives, nurses, and senior staff from the Obstetrics and Gynecology (OB/GYN) and KMC Unit.

The data collected was analyzed using Braun and Clarke's six-stage thematic analysis to identify themes related to human, technical, and organizational factors that may influence the integration of KMC education. Excel software was employed for data management and analysis. Findings: The study involved ten (n=10) participants and found that ANC providers demonstrated high motivation and strong belief in the importance of KMC education for all pregnant women, reinforcing its relevance and universal applicability. Existing health education sessions in ANC were seen as practical platforms for integration, while peer-led demonstrations and visual materials were valued for enhancing engagement. Despite these strengths, critical barriers such as inadequate provider training, lack of formal guidelines, limited staffing, and inadequate infrastructure pose significant challenges to consistent implementation. **Conclusion:** The study concludes that integrating KMC education into ANC services at MNH is operationally feasible and could strengthen maternal and newborn care if existing barriers are addressed. It is recommended that targeted training, clear implementation guidelines, and improved resource allocation be prioritized to support sustainable integration.

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102. Gapi, N. (2025). Endoplasmic Reticulum to Nucleus 1 (ERN1) gene mutation analysis among type 2 diabetes mellitus patients at regional referral hospitals in Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder resulting from insulin resistance and progressive beta-cell dysfunction, influenced by both genetic and environmental factors. Recent evidence highlights the role of endoplasmic reticulum (ER) stress in pancreatic beta-cell apoptosis. The Endoplasmic Reticulum to Nucleus 1 (ERN1) gene encodes a sensor enzyme critical for ER stress response. Mutations in this gene may impair ER function, promoting beta-cell death and increasing susceptibility to T2DM. However, data on ERN1 gene mutations in African populations remain limited. **Objectives:** This study aimed to determine the proportion of ERN1 gene mutations among T2DM patients and non-diabetic individuals at Regional Referral Hospitals (RRHs) in Dar es Salaam and assess their association with T2DM. **Materials and Methods:** This was a case-control study involving patients with type 2 diabetes mellitus (T2DM) and non-diabetic patients. Blood samples were collected for the extraction of genomic DNA. Real-time PCR and high-resolution melting (HRM) analysis were used to screen ERN1 exon 12, then amplified by cPCR. Successful amplicons were confirmed by gel electrophoresis, purified, and sequenced using the Big Dye Terminator Cycle Sequencing Kit. FASTQ sequences were aligned against the human reference genome (GRCh38.p14) using the Burrow-Wheeler aligner. Bcftool was used for variant calling, and each observed variant was tested for clinical outcome by Variant Effect Predictor from the Ensemble genome browser. Other risk factors were analyzed using SPSS version 23. **Results:** T2DM was significantly associated

with family history (OR = 2.85, p = 0.001), obesity (OR = 2.09, p = 0.014), and hypertension (OR = 2.03, p = 0.015. In silico analysis identified six variants in exon 12 of the ERN1 gene. Three missense variants c.1775G>T (p.Q554K), c.1550A>C (p.F479V), and c.1548T>G (p.Q478P) were detected in both cases and controls and were predicted to be benign. Two missense variants were observed only in cases: c.1774T>G (p.E553D; COSV101458439), predicted to be benign, and c.1787C>G (p.D558H), predicted to xii be deleterious. A synonymous variant (c.1549C>T; p.Q478Q) was identified in both groups. **Conclusion:** This study links ERN1 exon 12 mutations with T2DM, warranting validation in larger cohorts.

103. Gaudence, G. (2025). Perceptions and Experiences Among Adolescent Girls and Young Women on Prep Uptake in Arusha. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Adolescent girls and young women (AGYW) aged 15–24 are disproportionately affected by HIV, particularly in sub-Saharan Africa. Despite the proven effectiveness of pre-exposure prophylaxis (PrEP) in preventing HIV, its uptake among AGYW remains low. In Tanzania, barriers such as stigma, limited knowledge, restrictive gender norms, and systemic challenges continue to hinder access and acceptability. This study explores the perceptions and experiences among AGYW on PrEP uptake in Arusha. **Broad objective:** To assess the perceptions and experiences among AGYW on PrEP uptake in Arusha. **Methods:** A qualitative approach was used, involving 16 purposively selected AGYW (15–24 years) from Arusha. Data were collected through in-depth interviews and focus group discussions using semi-structured guide. Sessions were audio- recorded, transcribed verbatim, and analyzed thematically to uncover key insights on PrEP perceptions, beliefs toward PrEP, social and cultural influences, and barriers and facilitators to access. **Findings;** AGYW recognized their susceptibility to HIV and considered PrEP an effective prevention method. Uptake, however, was constrained by social stigma, parental and community judgment, cultural and religious norms, gender expectations, and limited youth-friendly services. Peer support, school- and community-based education, and safe, confidential health spaces emerged as key facilitators, enhancing self-efficacy and motivation to use PrEP. The study highlights the importance of multi-level interventions addressing individual, social, and structural factors to improve PrEP uptake among AGYW. **Conclusion:** Strengthening peer led education, integrating sexual and reproductive health education in schools and communities, promoting family engagement, expanding adolescent-friendly services, and engaging cultural and religious leaders to reduce stigma and support informed health decisions.

104. Gazilo, A. Z. (2025). Profile Of Dry Eye Disease Among Pregnant Women Attending Antenatal Clinic at Mnazi Mmoja Hospital in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences

Abstract

Background: Dry eye disease (DED), a multifactorial condition marked by tear film instability and ocular inflammation, causes symptoms like grittiness and blurred vision. The global prevalence of Dry eye disease among pregnant women ranges from 27.4% to 89.3% and in Africa it ranges from 34.3% to 47.3%. Hormonal changes, advanced maternal age, late pregnancy and prolonged screen time play an important part in its development. Untreated dry eye disease may progress to sight-threatening complications such as ocular surface abrasion, microbial keratitis which leads to visual impairment and even blindness. Dry eye disease during pregnancy needs to be addressed as symptoms jeopardize the quality of life and impair vision of pregnant women. Despite its impact, DED remains unaddressed during antenatal period, necessitating evidence-based studies that help in formulation of treatment protocol for DED during pregnancy targeted to reduce visual impairment and discomfort. **Aim:** To assess the prevalence of dry eye disease, clinical subtypes and associated factors among pregnant women attending antenatal clinic at Mnazi Mmoja Hospital in Dar es Salaam. **Methodology:** An analytical cross-sectional study was conducted for a period of 6 months among 380 pregnant women from July to December 2024 at Mnazi Mmoja Hospital. A total of 2320 pregnant women attended the clinic during the study period. A sampling frame of all eligible women attending ANC was obtained from the register book; No. 6 (MTUHA6) after excluding those with systemic conditions such as Diabetes Mellitus and systemic hypertension. A systematic random sampling technique was used. Data collection was done from Monday to Friday of a particular week and approximately 10-15 participants were selected for interview every day. Diagnosis of Dry eye disease was based on the Ocular Surface Disease Index score (OSDI>13) and positive clinical test Tear Breakup Time (TBUT), ocular surface staining, Schirmer's test results and meibomian gland dysfunction. Data were analysed using Stata version 17.0, categorical and continuous variables were summarized as frequencies and means, respectively. Associations between dry eye disease and independent variables were tested using Chi-square, Fisher's exact, and Modified Poisson regression, with statistical significance at $p< 0.05$. **Results:** A total of 380 pregnant women were recruited and analysed. The mean age was 31.7±6.7. More than a half of the study participants 196 (51.6%) were aged 31-46 years. Majority were married 273 (71.8%) and 211 (55.5%) had completed secondary education. The proportion of participant with dry eye disease was 202(53.2%). Fifty five percent of the participants with DED had mild symptoms, 26 (13%) had moderate and 65 (32%) had severe symptoms. Among 202 participants with DED, unclassified DED was the common subtype accounting for 72 (35.6%) participants, evaporative dry eye 50 (24.8%), aqueous deficient dryeye 13 (6.4%) and mixed dry eye 67 (33.2%). Advanced gestation age (aPR=2.18(1.550-3.072), p<0.001), being a housewife (aPR=1.48(1.179-1.857), p=0.001), use of Visual display terminals (aPR=1.36(1.219-1.845), p=0.048), working in low humidity (aPR=2.62(1.698 4.045), p=0.001) and air-conditioned rooms (aPR=2.40(1.685-3.415), p=0.001) were significantly associated with dry eye disease. **Conclusion:** Approximately 5 out of 10 pregnant women have dry eye disease, with unclassified dry eye disease being the predominant subtype. Advanced gestation age, occupation, extended screen time, and working environment are significantly associated factors. **Recommendations:** To establish a public health education on prevention of DED among pregnant women. Promote lifestyle modifications such as reduction of screen time and avoiding dry environments.

105. Gido, L. M. (2025). Experiences Of Women with Breast Cancer Receiving Treatment at Ocean Road Cancer Institute, Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Breast cancer (BC) is the most often diagnosed cancer and the most common cause of cancer deaths in women globally. Women in Tanzania usually face several emotional and psychological experiences and challenges from the moment they are diagnosed with BC. Experiences, challenges, and coping strategies of women undergoing BC diagnosis and treatment remain complex and challenging. In Tanzania, the experiences, challenges, and coping strategies of women receiving BC treatment are not well explored. **Aim of the study:** This research explored the experiences of women receiving BC treatment at Ocean Road Cancer Institute (ORCI) in Dar es Salaam, Tanzania. **Methodology:** This study employed a descriptive phenomenological design with a qualitative approach. A purposive sampling technique was used to obtain 15 study participants for in-depth interviews. An in-depth Interview (IDI) guide was used to collect the data related to the experiences, challenges, and coping strategies. Each participant was audio-recorded, and the audio data were transcribed verbatim; thematic analysis was used to analyze the information. **Results:** Three major themes emerged, 1) Psycho-social experiences of women with breast cancer, with the sub-themes of recognizing symptoms and treatment struggles, emotional reaction to diagnosis, and sharing experiences with significant others, 2) Challenges they experienced by women with breast cancer, with the sub-themes of effects of chemotherapy, problems in accessing timely care, long-distance travel to access care, inadequate family and social support, financial constraints, and distorted body image and 3) Coping strategies used by women with breast cancer with the subthemes of religious faith and spirituality, acceptance as a pathway to emotional strength, normalization through shared experiences, the use of health-promoting behaviors, assistance from institutions and organized groups and coping with distorted body image. **Conclusion:** Women with BC face significant psycho-social and economic challenges throughout their diagnosis and treatment. Despite these difficulties, many demonstrate resilience through a range of personal, social, and institutional coping mechanisms. The findings highlight the importance of addressing the non-medical dimensions of cancer care.

106. Gregory, L. (2025). Social and Cultural Factors Influencing the Uptake of Antenatal Services among Pregnant Women at Mkonze Health Centre in Dodoma City Council, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Maternal and newborn health remains a major concern in Tanzania, where many women receive inadequate antenatal care (ANC). Although WHO recommends eight ANC visits, only about half of pregnant women meet this standard. Low uptake is influenced by social and cultural factors, health facility barriers, and individual-level challenges, limiting access to essential services. Understanding these factors is crucial to improving ANC utilization and promoting better maternal and newborn health outcomes. **Objective:** This study explored the social, cultural factors influencing the uptake of ANC services among pregnant women attending at Mkonze Health

Centre in Dodoma City Council, Tanzania. Methods: This was an exploratory case study design. Quota sampling was used to recruit 25 participants. Data was collected by using a semi-structured interview guide. All interviews were audio recorded and transcribed verbatim. Thematic analysis approach was used to analyze data with assistance of NVivo software. **Results:** Four major themes emerged from the findings which were: (1) Individual factors, including delayed ANC initiation, financial constraints, fear, and limited knowledge about recommended care; (2) Social norms that shaped perceptions regarding the appropriate timing to begin ANC; (3) Socio-cultural factors such as family or partner support, traditional beliefs, and peer influence; and (4) health facility-related factors, including negative staff attitudes, long waiting times, inconsistent service availability, staff shortages, partner attendance requirements, distance to the facility, and delays caused by electronic system failures. **Conclusion:** The uptake of ANC services among pregnant women is influenced by a complex interaction of individual, social, cultural, economic, and health system factors. Delayed ANC initiation was due to limited awareness, emotional and social barriers, and cultural beliefs, reduces the effectiveness of ANC. Health system challenges such as provider attitudes, indirect costs, and male partner attendance requirements further constrain uptake of ANC. These findings emphasize the need for comprehensive interventions involving policymakers,

107. Gunda, A. (2025). Post-Urogenital Schistosomiasis Morbidities and Their Association with Health Literacy Among Reproductive Women at Misugwi District, Mwanza. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Urogenital schistosomiasis remains a major health concern for women of Reproductive age in sub-Saharan Africa. Poor health literacy around female genital schistosomiasis (FGS) may exacerbate symptom burden and hinder effective care-seeking. This study explored demographic, clinical, and behavioural factors associated with low FGS-related health literacy in a cross-sectional sample of women in endemic areas. **Methods:** A total of 291 women were surveyed in a cross-sectional study regarding history of urogenital schistosomiasis (US), health education exposure, proxy reproductive symptoms, and care-seeking behaviours. Bivariate and multivariable logistic regression models estimated crude and adjusted odds ratios (COR, AOR) for poor health literacy. **Results:** The history of the US was significantly associated with poor health literacy (AOR 1.84; 95% CI 1.59–2.13; $p < 0.001$). Reporting more than one morbidity for reproductive comorbidity further increased odds (AOR 3.60; 95% CI 2.20–4.60; $p < 0.001$). Women who sought care from traditional healers also had higher odds of low literacy (AOR 1.34; 95% CI 1.03–1.45; $p = 0.005$), whereas attending formal health facilities served as the reference. Self-reported FGS health education, age, marital status, education level, and employment were not independently associated with literacy levels. **Conclusions:** This study highlights a high prevalence of post urogenital schistosomiasis morbidities among women in Misugwi who experienced complications like pelvic pain, infertility, and hematuria. Women with prior urogenital schistosomiasis and those experiencing multiple FGS-related symptoms face substantial information gaps. Reliance on traditional healers underscores the need to engage these providers in literacy interventions. Standard FGS education programs may require content and delivery enhancements to effectively reach high-risk groups. Longitudinal and interventional

research should assess whether tailored literacy campaigns can reduce symptom severity and improve care pathways.

108. Gwakisa, K.N. (2025). Hiv Viral Load Testing Uptake and Associated Factors Among Children on Antiretroviral Therapy in Ruvuma, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Routine HIV viral load (HVL) testing is critical for monitoring treatment effectiveness and achieving viral suppression among children on antiretroviral therapy (ART). However, uptake of HVL testing remains suboptimal in many settings, including the Ruvuma Region of Tanzania. Understanding the magnitude and determinants of HVL testing uptake, along with perceived barriers, is essential for improving pediatric HIV care and achieving epidemic control. **Objectives:** To determine uptake of HVL testing, its associated factors, and explore perceived factors related to low uptake among children in Ruvuma region Tanzania. **Materials and Methods:** A mixed-methods convergent study was conducted in Ruvuma Region, Tanzania, from March to June 2025. Quantitatively, a retrospective cohort of children aged 0–14 years who initiated ART between 2020 and 2023 was analyzed using descriptive statistics and modified Poisson regression to identify factors associated with adequate HVL testing. Qualitatively, 28 participants including caregivers, expert clients, and healthcare workers were purposively sampled from eight facilities, and thematic analysis explored barriers and enablers of HVL testing adherence. Quantitative and qualitative findings were subsequently triangulated to provide comprehensive insights. **Results:** Among 381 children on ART, 244 (64.0%) had adequate HIV viral load testing uptake. In multivariable analysis, higher uptake was significantly associated with advanced clinical stage (adjusted Relative Risk [aRR] = 1.26, 95% CI: 1.09–1.44, p = 0.001), recent HIV diagnosis in 2023 (aRR = 1.79, 95% CI: 1.47–2.19, p < 0.001), and second-line ART (aRR = 1.42, 95% CI: 1.18–1.69, p < 0.001). Uptake was lower among children with unsuppressed viral load (aRR = 0.75, 95% CI: 0.56–0.99, p = 0.043), those initiated on ART in 2021 (aRR = 0.54, 95% CI: 0.35–0.82, p = 0.004), and children attending dispensaries (aRR = 0.81, 95% CI: 0.68–0.96, p = 0.013) compared to hospitals. Significant geographic disparities were observed, with higher uptake in rural settings (aRR = 1.50, 95% CI: 1.26–1.86, p < 0.001). Index testing and NGO referrals were also positively associated with HVL uptake (aRR = 1.71, 95% CI: 1.43–2.04, p < 0.001). Sex, age, visit type, and client stability were not associated with HVL uptake. Despite high guideline awareness, operational challenges, missed appointments, staffing gaps, delayed results —and sociocultural factors, including stigma and limited male involvement, hindered adherence. **Conclusion:** HVL testing uptake among children in Ruvuma remains below national targets, driven mainly by clinical, operational, and systemic factors rather than demographics. Strengthening pediatric services, caregiver follow-up, result turnaround, and facility M&E systems is essential to improve uptake and achieve viral **1**suppression. **Keywords:** HIV, viral load testing, Children on ART, Uptake, Ruvuma, Tanzania.

109. Gwangway, L. S. (2025). The prevalence and factors associated with depressive symptoms among postgraduate students at Muhimbili University of Health and Allied Sciences. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Depressive symptoms among postgraduate students represent a growing concern in higher education. Globally, it is estimated that one in every five postgraduate students has depression. Moreover, impairment in university students' interpersonal functioning, academic deterioration, and suicidality due to depressive symptoms are remarkable. Henceforth, when depressive symptoms are left, they may worsen and affect career development through academic deterioration, abandoning studies, and behavioral changes such as suicidal behaviors and social functioning. **Objective:** The purpose of the research is to determine the prevalence and factors associated with depressive symptoms among postgraduate students at MUHAS. **Methodology:** The study was conducted at MUHAS, Dar es Salaam. The study population was among postgraduate students across seven schools, including Clinical Medicine, Public Health, Pharmacy, dentistry, nursing, diagnostic medicine, and biomedical sciences. With this population, the study employed an analytical cross-sectional design to investigate depressive symptoms among those students. A sample size of 320 was calculated using the Cochrane formula, adjusted for non-respondents, and stratified sampling was employed to ensure proportional representation from each school. Data were collected using validated tools: The Patient Health Questionnaire (PHQ-9) at a cut point of at least 9, for depressive symptoms. Data were analyzed using SPSS Version 25, and the results with continuous data were summarized using mean and standard deviation, while frequencies were used for categorical data. Weight analysis was done, and bivariate and multivariate logistic regression analyses were used to assess associations between depressive symptoms and various biological factors and psychosocial factors. Statistically associated variables in the bivariate analysis with $p<0.25$ were identified to have an association with depressive symptoms among postgraduate students. Ethical clearance was sought from the MUHAS Senate Research and Publication Committee and the Director of Postgraduate Studies, and participants consented before responding to a questionnaire. **Results:** Among 320 study participants, (139 male, 181 female) one-quarter of 78(24%) study participants reported having probable depressive symptoms; where 33(10.0%), 37(12.1%), 08(2.0%) were in the year I, year II and year III respectively the mean age of the participants was 33.0 years and SD = 3.0). The study revealed clinical course, perceived dissatisfaction with academic performance, and family history of mental illness. (AOR = 3.27, 95% CI :1.67-6.29, p =0.001), (AOR = 0.109, 95% CI: 0.014-0.839, p = 0.013), and (AOR = 7.27, 95% CI: 1.02-15.85, p = 0.04). Respectively, they were significantly associated with depressive symptoms. **Conclusions:** Depressive symptoms were found to be common among postgraduate students at Muhimbili University of Health and Allied Sciences, with one-quarter of the study participants. Reporting a family history of mental illness, courses originated from school that involve clinical duties, and perceiving dissatisfaction with academic performance were independently associated with depressive symptoms. **Recommendations:** In this study, the prevalence of depressive symptoms among PGs at MUHAS is shown as a common problem. Routine screening protocols for depressive symptoms should be implemented by the students themselves by ensuring regular checkups on their mental health to

facilitate early diagnosis, intervention, and support. Further studies, like randomized controlled trials and cohort studies, that could give insight into causality, are needed in this area to guide the management of depressive symptoms.

110. Haji, F.F. (2025). Exploring the quality of life among patients following percutaneous coronary intervention at Jakaya Kikwete Cardiac Institute, Dar-es-salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Coronary artery disease is a condition affecting the blood vessels that supply the heart. Percutaneous coronary intervention (PCI) is a more effective revascularisation procedure that normally relieves chest pain (angina), decreases the need for anti-anginal drugs, and improves both exercise capacity and overall quality of life. However, despite its clinical success in improving outcomes, to our knowledge, in Tanzania, the extent to which PCI enhances or influences the quality of life (QoL) of patients remains insufficiently understood. **Objectives:** The study aimed at exploring the quality of life among patients following percutaneous coronary intervention at Jakaya Kikwete Cardiac Institute, Dar-es-Salaam. **Material and methods:** An exploratory qualitative study design was conducted to provide insight into the quality of life among patients after percutaneous coronary intervention (PCI) using a biopsychosocial framework. Semi-structured interviews were conducted for data collection from 12 purposively selected participants who had undergone PCI at JKCI. The sample size for this study was determined based on the principle of data saturation. Inclusion criteria were adults aged ≥18 years, who have undergone PCI for the 3 months and above prior to enrolment, and capable of communicating in Kiswahili or English. This study employed deductive thematic analysis approach guided by biopsychosocial model, to identify and analyse key themes and subthemes related to physical functioning, emotional well-being, and social well-being. **Results:** Three themes were identified; (1) physical functioning with subthemes of functional capacity, symptoms trajectory, and lifestyle modification and self-care. (2) Psychological experiences with subthemes of emotional effect and cognitive strategies. (3) Social experiences with subthemes of support system, community engagement, and family and social responsibility. **Conclusion:** The findings underscore the importance of adopting a holistic, biopsychosocial approach in post-PCI care. Beyond treating symptoms, healthcare systems should address patients' emotional well-being, social reintegration, and continuity of care to enhance recovery and long-term quality of life. ***Key words: Quality*** *of life, Biopsychosocial model, Emotional well-being, Physical functioning, social well-being.*

111. Halima, K. (2025). Experiences and Coping Strategies of Couples Seeking Fertility Care at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Worldwide, millions of infertile couples suffer from various physical, social and emotional experiences often with negative impact on themselves. Use of appropriate coping strategies can help mitigate the negative effects of infertility on these couples. Little is known on these effects and coping strategies on Tanzanian infertile couples. **Objective:** The study explored

experiences and coping strategies of couples seeking fertility care at Muhimbili National Hospital at the Samia Suluhu In-Vitro Fertilization (IVF) Center. **Materials and Methods:** A phenomenological explorative qualitative study focusing on the experiences and coping strategies of couples seeking fertility care at Muhimbili National Hospital was conducted from December 2024 to January 2025. Purposive sampling techniques were used, guided by information saturation. Fourteen in-depth interviews were conducted using a Swahili interview guide, and audio recordings were transcribed verbatim. Deductive thematic analysis by Braun and Clarke was used in the analysis. **Results:** We identified four themes namely psychological experiences, physical burden of infertility, social and financial experiences and variety of coping mechanisms among couples with infertility. Couples reported physical strain to several diagnostic and treatment procedures, emotional distress due to constant worrying, and hesitation to continue with treatment. Social stigma, gendered blame mostly targeting women and high treatment costs added to the burden. Couples coped through religious practices, mutual support, social engagement, and alternatives family arrangement like fostering children. **Conclusion:** Infertility causes emotional, physical, social, and financial strain, especially for women. Couples face stigma, high treatment costs, and relationship stress. The study urges on early psychosocial support, better management of treatment side effects, stronger partner communication, support programs and financial aid.

112. Hamad, Z. M. (2025). Factors associated with infection prevention and control compliance among healthcare providers at Mnazi Mmoja Hospital, Zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Millions of people worldwide suffer from healthcare-associated infections (HCAIs), which represent a major concern to patient safety. HCAIs prevalence ranges from 5.7% to 19.1%, indicating a major global concern. HCAIs contribute to the developing problem of antimicrobial resistance (AMR). Infection prevention and control (IPC) are critical for reducing these illnesses and combating AMR. This study investigates the factors that influence healthcare providers' IPC compliance at Mnazi Mmoja Hospital in Zanzibar. **Objective:** This study aims to examine factors associated with healthcare providers' Infection Prevention and Control (IPC) compliance at Mnazi Mmoja Hospital (MMH) in Zanzibar. **Methods:** This was a cross-sectional quantitative study that aimed to examine factors associated with healthcare providers' IPC compliance at Mnazi Mmoja Hospital (MMH) in Zanzibar. Quantitative data were collected by using a questionnaire. 353 participants were randomly selected to participate in this study. Statistical Package for the Social Sciences (SPSS) version 27.0 was used to analyze the data after it was imported from Microsoft Excel. A 95% confidence level and P-value <0.05 were used to indicate a significant association between independent and dependent variables in both univariable and multivariable regression analysis. **Results**: Of the 353 healthcare providers enrolled (average age 32, 60% female), 52.7% reported good IPC compliance, which is lower than the desired Tanzania national IPC standard of 80%. Higher compliance was significantly associated with age, gender, education, profession, experience, knowledge, and attitude, with males and those aged 31-40 being more likely to comply, while nurses and medical attendants complied more than clinicians ($p < 0.01$). The

perception was not associated with IPC compliance. The availability of IPC guidelines and regular monitoring were associated with compliance ($p < 0.01$ and $p = 0.04$, respectively), while training, availability of Personal Protective Equipment, sanitizer access, and supervision had no significant association with compliance to IPC. **Conclusion:** Healthcare provider's compliance with IPC measures in Mnazi Mmoja Hospital in Zanzibar is 52.7% which is lower than national averages, owing mostly to limitations in guideline availability and monitoring. Therefore, supporting guideline distribution, systematic supervision, and resource allocation, in addition to robust national regulations, will increase compliance hence minimizing infections, and improve patient and staff safety.

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113. Hamis, M. (2025). Factors influencing breast self-examination practice among women aged 45 and above in Mbinga district, Ruvuma region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Breast cancer is a major global health issue, and early detection is essential in reducing its morbidity and mortality. Breast self-examination (BSE) is a cost-effective method that empowers women to detect abnormalities early. Despite its benefits, the practices remain suboptimal, particularly in rural areas such as Mbinga District. **Broad Objective:** The study aimed to determine the proportion of women performing BSE and the factors influencing the practice among women aged 45 years and above in Mbinga District. **Methodology**: An analytic cross-sectional study was conducted involving 530 women aged 45 and above, selected through a four-stage sampling technique. Data were collected using an interviewer-administered questionnaire and analyzed using descriptive statistics and multivariable modified Poisson regression to evaluate the association between exposure and the outcome variable. **Results**: Of the 530 respondents, most were women aged 45–64. 32.1% were aged 45–54, 38.6% were aged 55–64, and 29.3% were aged 25–44. Most were married (74.9%), primarily housewives with no occupations (84.7%). Educational level was low, with 34.7% having no formal education. Household income was predominantly below TZS 500,000 annually (80.9%). BSE was practiced by only 35.3% of women, with 79.7% demonstrating poor practice. Knowledge of BSE was low (60.4%), and attitudes were largely negative (46.8%). The results show low confidence and difficulty in interpreting results. Independent predictors of BSE practice included age 45–54 years ($p < 0.001$) and 55–64 years ($p = 0.007$), high BSE knowledge ($p = 0.036$), positive attitude ($p = 0.005$), social support ($p = 0.005$), and participation in educational campaigns ($p = 0.001$). **Conclusion and Recommendation:** BSE practice among women was generally low. Poor knowledge, negative attitudes, limited family support, and not attending health training contributed to this. Targeted, culturally sensitive education on BSE, such as community-based education, structured health talks, and integration of BSE into primary health services, is needed to improve awareness and promote early breast cancer detection.

114. Hamisi, A. (2025). Burden of osteoporosis and associated risk factors among adult patients attending at Muhimbili Orthopedic Institute (Moi). Muhimbili university of health and Allied Science.

Abstract

Short background: Since osteoporosis is linked to a higher risk of fragility fractures and the resulting morbidity, it is a serious public health concern, especially for older adults. It is crucial to comprehend the extent of osteoporosis in healthcare settings because its prevalence is predicted to increase as the population ages. By evaluating bone mineral density, which is indicated by the femoral trabeculation patterns on plain pelvic radiographs, this study sought to determine the extent and severity of osteoporosis in patients fifty years of age and older who were seen at the Muhimbili Orthopaedic Institute (MOI). Aim of the study: The study specifically focused on stating the point prevalence of osteoporosis among older patients presenting with musculoskeletal complaints and necessitated ordering of a pelvic x ray. The study also entails about the relationship of osteoporosis and some associated risk factors. **Methodology:** This was hospital based cross sectional study done at the radiology department at MOI where 277 adequate pelvic x rays of adult patients above 50 years attended the facility between November 2024 and March 2025 form inpatient and outpatient departments were retrospectively reviewed by the PI and proofread by the senior radiologist to enhance the data reliability and their Sing index value recorder in the structured questionnaires. Data was cleaned and analyzed using SPSS version 23. Regression analysis was used to determine the true association of variable data with osteoporosis, frequency distribution tables will be utilized to summarize the data, and chi square will be used to check for associations between the variables with the categorical variable. **Results:** The study found that 62.5% of people had osteoporosis at the time of the study and female were the majority of perpetrators. There was a statistically significant association between the condition and advanced age, female sex, and having a chronic illness ($p < 0.05$). After using logistic regression, old age and female sex were the strongly associated risk factors. Conclusion: Osteoporosis is highly prevalent in our setting. Among the risk factors, female sex and advanced age are the statistically significant risk factors demonstrated in the study. **Recommendations:** In the resource--limited setting, adequately performed and windowed pelvic x--rays can be used to diagnose and grade osteoporosis.

Keywords: *Osteoporosis/ Singh index/ hysterectomy / chronic illness / depot.*

115. Hamisi, J.D. (2025). Visual functions and their association with road traffic accidents among commercial bus drivers in Dar es Salaam—Muhimbili University of Health and Allied Sciences.

Abstract

Background: Good visual function is an essential and fundamental component of safe driving, and it constitutes about 95% of the sensory requirement for driving. Tanzania has experienced an increase in road accidents, which prompted the principal investigator to undertake a study on the factors that can contribute to these accidents, and one of the important factors is visual function among drivers. **Aim:** To assess the visual functions and their association with the occurrence of

road traffic accidents among commercial bus drivers in Dar es Salaam. **Methodology:** This was a cross-sectional analytical study that recruited 400 study participants using a consecutive sampling technique at Magufuli bus terminal in Dar es Salaam. Data were collected through interviewer administered questionnaire, and a comprehensive eye and visual function examination was done for all participants. Data were analyzed using SPSS version 25. A p-value of < 0.05 was considered significant for the association between variables. **Results:** All 400 study participants were male with a mean age of 44.49+ 11.25. They all had a history of eye checkups at the time they were issued a driving license. The proportion of visual function impairment among the respondents' eyes were 23%, 1%,4.2%,2.5% and 8% for visual acuity, visual field, color vision, stereopsis, and contrast sensitivity, respectively. About 20% of participants had a history of road traffic accidents while driving their commercial vehicles. Visual field and cooler vision were statistically associated with the occurrence of road traffic accidents. **Conclusion:** Most of the bus drivers had normal visual functions, which included visual acuity, visual field, stereopsis, color vision, and contrast sensitivity. There was a significant association between color vision and visual field defect with the occurrence of road traffic accidents. **Recommendation:** Emphasis on regular eye check up to all commercial bus drivers every year, as it has been recommended by the government through OSHA, for drivers to know their visual status, hence a reduction in RTA due to poor visual function.

116. Hanif, N. (2025). Prevalence, clinical characteristics and short-term outcome of peripartum cardiomyopathy among women with heart failure admitted at Jakaya Kikwete Cardiac institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Peripartum cardiomyopathy (PPCM) is an idiopathic dilated cardiomyopathy presenting with symptoms of heart failure (HF) during the last month of pregnancy or in the months following delivery. Expecting mothers get this form of cardiomyopathy, particularly those with African heritage. Data on the frequency and features of PPCM in Tanzania are currently scarce. **Objectives:** To determine the prevalence, clinical characteristics and the short-term outcome of PPCM among women with HF admitted at Jakaya Kikwete cardiac institute (JKCI). **Methodology:** A hospital-based descriptive cross-sectional study was carried out from May to December 2024 in which all women with confirmed diagnoses of HF made by attending physicians were recruited. The minimum sample size required was 309 patients. A standardized questionaire collected patient socio-demographic, clinical data and laboratory findings plus electrocardiogram (ECG) and echocardiogram (ECHO) findings. Participants underwent a thorough physical examination and diagnosis of PPCM was made based on the temporal relation of HF to the last pregnancy and delivery as proposed in 2010 ECS working group on PPCM guideline. Also, in this study, we determined short-term outcomes which are improvement or regression in HF NYHA functional class and death after one month post hospitalization. Data were entered and analyzed into IBM SPSS STATISTICS version 27. Descriptive statistics were summarized as median and interquartile range (IQR) for continuous variables and frequencies (%) for categorical variable for all study participants. Prevalence of PPCM was calculated as proportion of women diagnosed with PPCM over all women with HF admitted during the study

period. **Results:** A total of 309 participants were enrolled. In the total studied population, the median age was 56.0 years, IQR [41-68] years, median BMI was 27.1kg/m2, IQR [23.6-31.0]kg/m2 and median parity was 4, IQR [3-6]. The overall prevalence of PPCM among women with HF admitted at JKCI was 15 out of 309 (4.9%). Over-half of our participants with PPCM (53.3%) were aged > 35years and around two-third (60.0%) had parity of three or more children. Short-term outcome observed was majority 14/15 (93.3%) of women with PPCM had improvement in HF NYHA functional class, and mortality occurred in 1/15 (6.7%) woman**.** **Conclusion:** The study's findings are suggesting that PPCM is not uncommon among HF women admitted to JKCI. Taken together, this study's findings provide further insight into PPCM and its related outcomes. **Recommendations:** Healthcare providers should consider cardiac monitoring as a routine examination of women during prenatal and postnatal period. More awareness should be created by healthcare providers on alarming signs during prenatal and postnatal period. However, further research with large sample size is necessary to determine the associated factors of PPCM in our setting.

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117. Happiness, K. (2025). Understanding Stress Factors and Coping Strategies of Caregivers of Children with Leukemia at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Childhood leukemia is the most common paediatric cancer globally, accounting for approximately 30% of all childhood cancers. Despite advancements in treatment, caregivers of children with leukemia faced significant physical, emotional, financial, and social challenges. In Tanzania, leukemia care is primarily available at tertiary hospitals, with limited studies aiming to understand the stress factors and coping strategies of caregivers. Understanding these stress factors and coping strategies is essential to improve caregiver support and patient outcomes. **Aim of the Study:** To explore the stress factors and coping strategies of caregivers of children with leukemia at Muhimbili National Hospital (MNH). **Methodology:** This study employed an exploratory qualitative design to investigate the stress factors and coping mechanisms of caregivers for children with leukemia at Muhimbili National Hospital, Tanzania. Data was collected through in-depth interviews (IDIs) using a semi structured interview guide, and field notes was taken to capture additional contextual details. Data analysis was done manually, guided by Lazarus and Folkman's Stress and Coping Theory. A deductive analysis approach was employed, utilizing a pre-prepared codebook that regularly reviewed and modified as new themes and sub-themes emerge. **Results:** Four main themes emerged: Emotional psychological struggles, social isolation and economic, spiritual and religious coping, and health engagement and perception. While healthcare providers were perceived positively, systemic barriers, including delayed referrals and limited diagnostic capacity, hindered timely and effective treatment access. **Conclusion and Recommendation:** Caregivers at Muhimbili faced heavy emotional and financial burdens but remained resilient. The study highlighted support gaps and recommends strengthening psychosocial and financial assistance.

118. Hashim, H.B. (2025). Health Care Cost, Health Insurance and Quality of Life Among Chronic Kidney Disease Patients at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic kidney disease (CKD) imposes a considerable clinical and economic burden on patients, particularly in low- and middle-income countries like Tanzania. The cost of long-term care, frequent need for dialysis, and limited insurance coverage present ongoing challenges for patient well-being and financial protection. **Aim of Study:** To determine the annual healthcare costs, quality of life (QOL), and cost-related factors including health insurance status and out-of-pocket (OOP) expenditure among CKD patients undergoing dialysis at Muhimbili National Hospital (MNH). **Materials and Methods:** A cross-sectional analytical study was conducted among 362 adult CKD patients receiving dialysis at MNH. Structured questionnaires captured data on demographics, healthcare costs, insurance status, and patient-reported QOL (using the KDQOL-SF™ tool). Descriptive statistics, t-tests, and linear regression analyses (simple and multiple) were performed to explore group differences and associations between costs, insurance, and QOL. Multiple linear regression analysis, a method that estimates the independent effect of several variables simultaneously was applied to assess predictors of QOL Out-of-pocket costs among insured patients were also quantified. Statistical significance was set at $p < 0.05$. **Results:** The mean annual treatment cost across all CKD patients (insured and uninsured combined) was TZS 7.46 million per patient, with a median of TZS 4.56 million per patient, and costs varied widely among patients. Most patients (79%) were insured and all of them were under the National Health Insurance Fund (NHIF), with coverage highest among employed and comorbid individuals. Quality of life was lowest in physical, mental, and burden-of-disease domains, and higher in symptom and effects domains. Multiple regression showed that higher annual healthcare costs ($\beta = -0.18$, $p = 0.031$) and comorbidity status ($\beta = -1.87$, $p = 0.045$) were significantly associated with lower QOL. Insurance status was not a significant predictor of overall QOL in adjusted models, while older age remained the most important negative predictor. Among insured patients, substantial OOP costs (top-up payments) remained mainly for transport, food, and consumables with a mean annual OOP of TZS 5.6 million per patient. **Conclusion:** CKD patients at MNH face substantial economic hardship, with significant annual treatment costs and persistent OOP expenditures despite high insurance coverage. Poor QOL was strongly associated with higher costs, comorbidity, and advancing age, but not directly with insurance status. These findings highlight critical gaps in insurance benefit packages especially for non-medical costs and underscore the need for more comprehensive financial protection and holistic care strategies targeting vulnerable subgroups. **Recommendations:** Efforts should be made to expand health insurance coverage and ensure more comprehensive benefit packages for CKD patients. Policymakers should also prioritize increasing the number and geographic distribution of dialysis centers to reduce transport costs and improve access to care. These interventions may help reduce the financial burden and improve quality of life among CKD patients in Tanzania.

119. Hassan, A. (2025). Economic burden related to breast cancer treatment at a tertiary hospital in Tanzania: a patients' perspective. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Breast cancer is the most prevalent cancer type among women worldwide. It remains one of the leading causes of cancer-related morbidity and mortality among women globally, with low- and middle-income countries like Tanzania facing significant challenges in accessing diagnosis and treatment. Understanding the economic burden faced by breast cancer patients is crucial in informing policies so as to improve access to treatment services. **Aim:** To determine the economic burden of accessing breast cancer treatment at Ocean Road Cancer Institute (ORCI) in Tanzania from the perspective of patients. **Methodology:** This study was a facility-based, cross-sectional analytical. The costing approach was micro-costing to estimate the direct and indirect costs incurred by patients and caregivers per year. A total of 118 breast cancer patients attending ORCI were recruited through a simple random sampling approach. Data on direct medical, direct non-medical, indirect costs, and coping strategies were collected through structured questionnaires. Descriptive and inferential statistical analyses were used to estimate the unit costs and identify cost drivers and coping mechanisms. **Results:** The analysis focused on three major cost components which are direct medical costs, direct non-medical costs, and indirect costs (income loss). For patients under the cost-sharing and partially insured schemes, the average direct medical cost (excluding hormonal therapy) was Tshs 2,693,837.93 and Tshs 10,766,145.62 for hormonal therapy recipients. The average direct non-medical cost was Tshs 3,146,795.34 and the indirect cost representing income loss due to missed workdays averaged to Tshs 340,000.17. This made the total unit cost per patient per year for this group to be Tshs 6,180,633.44. Again, cost rose significantly to a total annual unit cost estimate at Tshs 13,834,760.72 among cost-sharing and partially insured patients who received hormonal therapy (trastuzumab). In comparison with patients under full insurance coverage, the annual unit cost per patient was Tshs 9,075,217.28 and for those who received hormonal therapy, the cost increased to Tshs 28,457,036.87 per patient per year. However, costs among fully insured patients were covered by the insurer and no out of pocket payment was incurred by the patient for direct medical costs. Distance to tertiary health facility and duration of illness were identified as cost drivers with p-values, $p=0.001$ and $p=0.049$ respectively. Family and relative financial assistance approach was employed by 62.7% of patients while a minority acquired funds from formal institutions. Generally, coping strategies involved irreversible asset loss among patients and their families succumbing them into long term poverty. **Conclusion:** Breast cancer care in Tanzania imposes a substantial financial burden on patients, especially those from peripherals and without health insurance and even those with partial health insurance. Recommendations: Promoting universal health insurance, decentralizing cancer services sensitizing early detection and putting cost subsidies in medical products are crucial recommendation for this study.

120. Hassan, A. R. (2025). Relationship Between Sleep Quality and Cellular Health Among Undergraduate Students at Muhas. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sleep plays a crucial role in maintaining physiological and cellular function. However, medical and other health sciences students often face sleep disturbances due to academic and clinical demands. This study investigated the relationship between sleep quality and cellular health, using the Pittsburgh Sleep Quality Index (PSQI) and bioelectrical impedance BIA phase angle (PhA), respectively, among undergraduate students at Muhimbili University of Health and Allied Sciences (MUHAS). **Methods:** This cross-sectional study involved 260 undergraduate students, with 251 providing valid data. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), and cellular health was evaluated through phase angle values obtained via bioelectrical impedance analysis (BIA). Data analysis was conducted using Microsoft Excel and Stata version 15. Statistical methods included descriptive statistics, independent samples t-tests, Chi-square tests, one-way ANOVA, correlation analysis, and regression models. Chi-square tests compared the distribution of sleep quality and phase angle categories across demographic and health-related variables. One-way ANOVA assessed differences in mean phase angle across groups (e.g., sex, obesity status, physical activity), while t-tests compared means between good and poor sleepers. Cohen's d estimated effect sizes. Spearman's rank correlation was used to examine the relationship between global PSQI scores and phase angle values. Bivariate and multivariable linear regression analyses were used to assess the independent effect of sleep quality on phase angle, adjusting for age, sex, obesity, and physical activity. Ordinal logistic regression identified predictors of phase angle category, with sleep quality and other relevant variables included as independent predictors. **Results:** Poor sleep quality was highly prevalent (79.7%), with a mean PSQI score of 7.1 ± 2.3. Despite this, 64.5% of participants had BIA phase angle values above the average. Students with poor sleep quality had significantly lower mean BIA phase angle (6.30 ± 0.81) than those with good sleep (7.31 ± 0.89, $t = -7.74$, $p < 0.001$; Cohen's $d = 1.22$). A moderate negative correlation was observed between PSQI scores and BIA phase angle (Spearman's $\rho = -0.42$, $p < 0.001$). Multivariable linear regression confirmed that poor sleep quality independently predicted lower BIA phase angle ($\beta = -0.142$, 95% CI: –0.180 to –0.104, $p < 0.001$), even after adjusting for gender, age, obesity status, and physical activity **Conclusion:** Poor sleep quality is significantly high among undergraduate students at MUHAS, and is significantly associated with reduced cellular health, as reflected by lower BIA phase angle values. These findings suggest that sleep quality is a modifiable determinant of cellular and physiological functioning. **Recommendations:** The study highlights the need for universities to promote sleep health education and integrate sleep quality assessments into student wellness programs. Further longitudinal research is recommended to explore causal links between sleep quality and cellular health and to evaluate interventions aimed at improving physiological resilience.

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121. Haule, J. (2025). Factors associated with immunization defaulters among under-fives children at Temeke Municipal Council, Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Immunization is a critical public health intervention that significantly reduces under-five mortality from vaccine-preventable diseases. Despite Tanzania's remarkable

achievements in immunization coverage, defaulters remain a public health concern, especially in urban municipalities like Temeke. This study investigates the factors associated with immunization defaulting among under-five children in Temeke Municipality, Dar es Salaam. **Broad Objective:** To identify factors associated with immunization defaulters among under-five children in Temeke municipality. **Methods:** A cross-sectional quantitative study was conducted using multi-stage sampling. Seven high-defaulter wards were purposively selected from Temeke Municipality, followed by random selection of health facilities and households. Data were collected from 271 caregivers of children aged 6 weeks to 59 months using structured questionnaires. Data entry and cleaning were done in SPSS version 27. Descriptive statistics summarized socio-demographic characteristics, while bivariate logistic regression assessed crude associations between independent variables and immunization defaulting. Variables with $p < 0.05$ were included in a multivariable logistic regression model to determine independent predictors of defaulting. **Results:** Out of 271 children, 28.4% had defaulted on immunization. Caregivers who incurred a transport cost of at least Tsh 1,000 (0.36 USD) had significantly higher odds of defaulting (AOR = 4.038, $p = 0.001$). Lack of year-round access to facilities (AOR = 3.332, $p = 0.006$) and negative community beliefs about immunization (AOR = 6.480, $p = 0.004$) were strong predictors of defaulting. Interestingly, longer waiting times at facilities were associated with reduced odds of defaulting. Caregiver education and income were not significantly associated with defaulting. **Conclusion:** Immunization defaulting in Temeke Municipality was strongly associated with transport costs of ≥ Tsh 1,000, limited year-round accessibility of health facilities, and negative community beliefs and misconceptions about vaccines. In contrast, socio-economic status such as caregiver income and education showed no significant association. Addressing these barriers will significantly improve immunization completion rates.

122. Herman, F.C. (2025). Effectiveness of rHuEPO in improving erythrocyte indices and associated factors among patients with CKD on maintenance hemodialysis in Dar-es-salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Exogenous erythropoietin is the form of recombinant human erythropoietin (rHuEPO) used to treat anemia secondary to chronic kidney disease (CKD). Over the years, rHuEPO has been introduced to supplement the reduced endogenous erythropoietin, and the erythrocyte indices are commonly monitored to assess rHuEPO performance. Despite its benefits, 5 to 34% of CKD of the patient globally exhibit suboptimal response. Also, local studies and data are scarce. **Objective:** The main aim of this study is to assess the effectiveness of rHuEPO in improving erythrocyte indices and associated factors among patients with CKD on maintenance hemodialysis in Dar-es-salaam. **Methodology:** A prospective observational cohort study was conducted from 01st April to 19th May 2025 at Muhimbili National Hospital in Dar es Salaam. A total of 170 CKD patients on maintenance hemodialysis were enrolled and followed up for 29±3 days. Rate changes in erythrocyte indices were used to assess the effectiveness of rHuEPO, then assessing the percentage of patients who experience improved rate change of hemoglobin concentration of ≥0.1g/dl. SPSS version 25 was used to process and analyze the data. Descriptive statistics summarized socio-demographic variables and rate changes in erythrocyte indices. The

erythrocyte indices were compared using paired t-tests, and modified Poisson regression analysis was utilized to find relevant factors associated with rHuEPO responsiveness. **Results:** Demographic characteristics of the studied patients aged 53±13 years, while males were the majority, 62.9%. The baseline mean±SD of erythrocyte indices were HB 9.05±1.29, HCT 31.30±5.16, RBC 3.6±0.61, MCV 86.54±8.07, MCH 25.88±2.77, and MCHC 29.53±2.34. While the mean±SD change of erythrocyte indices was HB +0.72±0.92, HCT +2.1±3.72, RBC +0.22±0.43, MCV +0.46±5.26, MCH +1.11±2.02, and MCHC +0.57±2.54. The percentage of patients who experienced an improved rate change of hemoglobin concentration of ≥0.1g/dl was 77.1%. Factors that were significantly associated with rHuEPO effectiveness included low serum iron level, elevated C-reactive protein, and high ferritin. **Conclusion:** rHuEPO therapy showed improved erythrocyte indices among CKD patients on maintenance hemodialysis treated with rHuEPO. However, 22.9% of patients exhibit hyporesponsiveness, and for better rHuEPO response, serum iron, ferritin, and C-reactive protein should be optimized.

123. Herve, M.T. (2025). Quality of life among patients who underwent palliative management for malignant obstructive jaundice at Muhimbili National Hospital: A prospective cohort study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: This study aimed to assess the quality of life among patients who underwent palliative interventions for malignant obstructive jaundice at Muhimbili National Hospital. **Methodology:** This was a prospective cohort study conducted among 42 patients with MOJ who underwent palliative interventions from October 15, 2024, to April 15, 2025, at Muhimbili National Hospital. The data were collected from the participants using EORTC QLQ-BIL21 and EORTC QLQ-C30 assessment tools before and after palliative intervention. SPSS Software was used for data analysis. Multilinear regression was used to evaluate the association between independent and dependent variables. $P < 0.05$ was the threshold for statistical significance. **Results:** The mean age was 60.4±12.25 years. The female to male ratio was 3.2:1. Majority of patients presented with poor performance status (69.0%). Majority of the participants presented with hypoalbuminemia (78.6%) and elevated INR (50.0%) on admission while 97.6% of the patients were having hyperbilirubinemia. Cholangiocarcinoma was the most common cause of malignant obstructive jaundice (45.2%). Most of patients underwent PTBD (54.8%). The baseline mean scores for different domains and symptoms were below the referent values. However, the overall quality of life was improved after palliative interventions; particularly jaundice symptoms, tiredness, insomnia, constipation, loss of appetite, nausea and vomiting and financial burden was relieved. No factor was significantly associated with change in quality of life. **Conclusion:** Palliative interventions performed among patients with MOJ improved their quality of life. However, no factor has been found to be associated significantly with change in quality of life.
Keywords: *malignant obstructive jaundice, palliative interventions, quality of life*

124. Hizza, N. P. (2025). Reimbursement cost of cervical cancer across disease stages, among NHIF beneficiaries treated at Ocean Road Cancer Institute from 2022-2024. Muhimbili university of health and Allied Science.

Abstract

Background: Cervical cancer is the leading cause of cancer-related illness and death among women in Tanzania, despite being largely preventable through vaccination and screening. Most patients present at advanced stages, increasing treatment costs and straining the National Health Insurance Fund (NHIF). While NHIF provides crucial financial protection, little evidence exists on how reimbursement costs vary by disease stage and what this implies for fund sustainability and policy reform. **Objective:** To assess cervical cancer treatment reimbursement costs across disease stages among NHIF beneficiaries treated at ORCI from 2022 to 2024. Methods: A cross-sectional analytical design was applied using secondary data from the ORCI "Inaya" database for all NHIF beneficiaries diagnosed and treated from January 2022 to December 2024. Costs were estimated from the payer perspective, adjusted for inflation and discounting, and analyzed with descriptive statistics, regression models, sensitivity testing, and budget impact scenarios. **Results:** A total of 1,312 patients were treated, with cases nearly tripling from 2022 to 2024. The majority (74.3%) were diagnosed at late stages (III–IV), particularly stage IV (37.5%). The average reimbursement cost per patient was TZS 8.2 million, rising from TZS 4.6 million in stage I to TZS 10.5 million in stage IV. Costs were significantly higher among younger patients (30–39 years), those from the Western Zone, and in later years of treatment. Disease stage was the strongest predictor of cost, followed by age, residence, and treatment year, while NHIF membership type had no significant effect. Budget-impact modeling suggested that shifting 25–50% of late-stage cases to early detection could save NHIF between TZS 823 million and 1.6 billion over three years. **Conclusion:** The findings confirm that late-stage cervical cancer substantially increases NHIF reimbursement costs, with demographic and geographic disparities further exacerbating financial pressures. NHIF's sustainability is at risk without greater investment in prevention and early detection. Therefore, revising NHIF benefit packages to explicitly cover preventive services, aligning reimbursement mechanisms with early detection incentives, and addressing regional inequities in cancer care are critical for advancing Universal Health Coverage (UHC) in Tanzania.

125. Holela, M.A. (2025). Nutritional and physical activities associated with postpartum hyperglycaemia among women attending postnatal clinics in Dar es Salaam.

Abstract

Prevalence of Gestational Diabetes Mellitus in Tanzania is raising paralleling its contribution to maternal morbidity and mortality. Studies have reported a prevalence of postpartum hyperglycemia in Africa to be 15% with 48% of the women progressing to T2DM five years postpartum. Carbohydrate dense diet has been correlated with glucose intolerance in most pregnant women. However, evidence is scarce and not systematic on factors associated with post-partum hyperglycemia in Tanzania. This study addresses the critical need for local data on postpartum hyperglycemia in Tanzania by filling the gap on knowledge and data by examining and identifying nutrition, dietary habits and Physical activity levels linked to postpartum hyperglycemia to inform targeted nutritional and physical activity interventions for improved maternal health outcomes. This study assessed nutritional and physical activity associated with postpartum hyperglycemia among women attending postnatal clinics in Dar es Salaam. **Methods:** We conducted an analytical, hospital based cross-sectional study in postnatal clinics based in Dar es Salaam, Tanzania. A

multistage random sampling method was used to select the three health centers and recruit women attending postnatal clinic from April to June 2025. Structured questionnaires were used to collect data, descriptive statistics was done using mean, proportion, and chi-square test. We employed an univariable and multivariable modified poison regression analysis to determine the association of independent variables with postpartum hyperglycemia. The p-value of <0.05 was considered statistically significant. **Results:** We enrolled 392 postpartum women, from Sinza health center (HC) (48%), Magomeni HC (28.3%) and Kinyerezi HC (23.7%) with the mean age of 31.52 (±7.54). Postpartum hyperglycemia was prevalent in 18.6% of the women. The prevalence of postpartum hyperglycemia was higher among women with higher BMI (overweight and obese) (APR= 8.1, p<0.001, 11.6, p<0.001) respectively, and those with refined carbohydrate dietary pattern (APR= 1.54, p=0.022), while diet rich in legumes and protein was protective against postpartum hyperglycemia (APR= 0.69, p=0.001), after adjusting for potential confounders. **Conclusion:** About one in five postpartum women had hyperglycemia and it is linked to modifiable nutritional and dietary factors. These include overweight, obesity and consumption of refined carbohydrate, while protein and legumes were protective factors. Attention should be prioritized on nutrition education and promotion of healthy lifestyles during the peripartum period to ensure optimal glucose control postpartum.

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126. Hosea, D.S. (2025). The Effect of Caregivers' Psychosocial Factors on ART Adherence Among Children Living with HIV In Mbeya City Council, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV remains a major global public health challenge, with sub-Saharan Africa bearing the highest burden. In Tanzania, access to antiretroviral therapy (ART) has improved survival among children living with HIV (CLHIV); however, maintaining consistent adherence remains a major challenge. Caregivers' psychosocial factors, such as stress, stigma, and limited instrumental support, have been linked to poor adherence but remain underexplored in the local context. **Objective:** To assess the association of caregivers' psychosocial factors, stress, stigma, and instrumental support with ART adherence among CLHIV in Mbeya City Council, Tanzania. **Methods:** A cross-sectional analytical study was conducted among 408 caregivers of HIV-positive children aged 2–10 years attending care and treatment clinics in Mbeya City. Data were collected using structured questionnaires via the Open Data Kit (ODK) and analyzed with R version 4.1.2. Descriptive statistics and modified Poisson regression were used to determine associations between caregivers' psychosocial factors and ART adherence, measured by four-day and one-month recall. **Results:** Most caregivers were female (71.3%) and aged 30–44 years (49%). Nearly all children (99.5%) were on once-daily ART, but 62.7% of caregivers reported missed doses. Good adherence (≥95%) was 86.8% by four-day recall and 62.3% by one-month recall. Forgetfulness, workload, and drug shortages were the main reasons for missed doses. Perceived stigma affected 60% of caregivers, influencing their willingness to discuss HIV or maintain medication schedules. Instrumental support from healthcare workers improved adherence, while stress had no significant effect. **Conclusion:** ART adherence among CLHIV in Mbeya remains below optimal levels, particularly over longer periods. Stigma and limited support remain key

barriers. Strengthening caregiver support, addressing stigma, and integrating psychosocial and mental health services into HIV care are essential to sustain optimal pediatric ART adherence.

127. Hosea, E. (2025). Evaluation of Sequential Organ Failure Assessment for Patient Severity and Prognostic Outcomes in Muhimbili National Hospital Intensive Care Units. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The sequential organ failure assessment (SOFA) score is a clinical tool for assessing organ failure, enabling early detection of conditions such as sepsis, and predicting mortality while caring for and monitoring ICU patients. It provides valuable insights for healthcare providers to improve clinical decision-making, facilitate early intervention strategies, and optimize the utilization of ICU resources. Despite its importance, there is limited published evidence on SOFA score utilization in Tanzanian ICUs, leading to inconsistencies in assessing disease severity, recognizing organ failure, and predicting patient prognosis. **Aim of the study:** To evaluate the clinical utility and implementation feasibility of the SOFA score in predicting patient outcomes at Muhimbili National Hospital ICU. **Methodology:** This retrospective cohort study analysed 380 adult ICU patient records (January-December 2024) from Muhimbili National Hospital. Day 1 SOFA scores, demographics, clinical characteristics, and patient outcomes were extracted. Descriptive statistics and regression analysis determined prognostic associations ($p < 0.05$). **Results:** Among 380 adult ICU patients (mean Day 1 SOFA: 11.4 ± 4.7), ICU mortality was 90.8%. Patients with sepsis had higher median SOFA scores; sepsis univariably increased mortality (cRR: 1.139) but not independently in multivariable analysis ($p=0.205$). Higher Day 1 SOFA score independently increased mortality (aRR: 1.031 per unit; $p< 0.001$). Among survivors, higher SOFA scores decreased the relative risk of discharge with ongoing or minimal management. **Conclusion:** The Day 1 SOFA score is a strong independent prognostic tool for illness severity and patient outcomes (mortality, length of stay, discharge needs) in this resource-limited environment. High mortality and identified risk factors underscore the importance of early severity assessment for informing nursing practice, clinical decision-making, resource allocation, and discharge planning.

128. Hussein, A.B. (2025). Assessing Emergency Preparedness and Capacity for Pediatric Care in Emergency Departments of Public Hospitals in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: In Tanzania, 25% of patients attending emergency departments (EDs) are of pediatric age. Due to the age-specific anatomical, physiological, and emotional characteristics of children, emergencies involving pediatric patients require specialized care. Currently, there is a scarcity of literature about the preparedness and capacity of EDs and acute intake areas of Tanzanian hospitals to handle pediatric emergencies. This paper aimed to understand the current state of preparedness among EDs and acute intake areas in Dar es Salaam to handle pediatric emergencies. **Methods:** This cross-sectional observational multicenter study was conducted using

a structured checklist adapted from the International Federation of Emergency Medicine (IFEM) and the American Academy of Pediatrics (AAP). These checklists were used by Research assistants who visited the EDs and acute intake areas across 12 public hospitals in Dar es Salaam, encompassing District, Regional, and tertiary levels. and collected data through interviews and direct observation. The findings from this study were summarized using descriptive statistics. **Results:** Pediatric patients comprised 22.8% of ED patients. Only 50% of hospitals had dedicated pediatric areas in EDs. The mean availability of pediatric resuscitation equipment was 39% with functionality of 37%. Overall emergency medication availability was 60.1%, with better availability in regional hospitals. Only 37.9% clinicians were trained in BLS and 9.6% in PALS, and training was mostly concentrated at tertiary levels. No hospital had pediatric-specific disaster plans or coordinators. **Conclusion**: Public hospitals in Dar es Salaam have notable deficiencies in handling pediatric emergencies, particularly in the availability of resuscitation equipment, essential medications, and personnel trained in pediatric emergency care. Also, a complete absence of pediatric disaster plans. Addressing these shortcomings needs thorough evaluation and updating of current policies, investment in training of clinical personnel, and improving the availability of resuscitation equipment and medication, to improve overall pediatric emergency care in Tanzania.

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129. Ibrahim, H.K. (2025). In-hospital complications and associated factors among acute myocardial infarction patients undergoing percutaneous coronary intervention at Jakaya Kikwete Cardiac Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Acute myocardial infarction (AMI) is the most severe form of coronary artery disease (CAD), accounting for over 9.1 million annual deaths globally. Treatment of AMI mainly includes primary percutaneous coronary intervention (PCI) that reduces morbidity and mortality. Despite the proven benefits, PCI can be associated with some unfavourable outcomes. **Aim of the study:** The objective of this study was to assess in-hospital complications and associated factors among patients with acute myocardial infarction undergoing PCI at Jakaya Kikwete Cardiac Institute (JKCI). **Methodology:** This was a retrospective cohort study that involved patients with AMI who underwent PCI at JKCI between 1st January, 2022 and 31st December, 2024. Data was extracted from JKCI's electronic health management system and Catheterisation Laboratory reports and charts. Data was abstracted using a structured tool, included patient demographics, comorbidities, clinical and laboratory parameters angiographic findings and in-hospital PCI complications. Descriptive statistics were used to summarize baseline characteristics and outcomes of the study cohort. Categorical variables analyzed using the χ^2 test. Univariate correlates with a value of $p \leq 0.2$ were included in multivariate logistic regression analysis to identify associated factors of in hospital mortality. A significance level was set at $p < 0.05$. **Results:** A total of 229 participants were enrolled, predominantly male (77.7%) with a mean age of 60.3 ± 12.7 years. Nearly 40% were of premature age for CAD, and hypertension was the most common comorbidity (78.6%). The median time from symptom onset to first medical contact was 19 (IQR 7.5–48) hours, with 21% presenting in Killip class II or higher. Femoral access was used in 65.5% of procedures, and the left anterior descending artery was most frequently affected (83.4%). Post-PCI, 95.2% achieved TIMI flow grade III. The most common complications were contrast-induced

acute kidney injury (CI-AKI) (16.6%), major bleeding (6.6%), and stroke (3.1%). In-hospital mortality was 14%, mainly due to acute heart failure, and was significantly associated with higher Killip class and CI-AKI. **Conclusion:** A considerable proportion of patients presented with premature CAD, highlighting the growing burden of early-onset CAD in our setting. Delayed presentation after symptom onset was xi common, and femoral access remained the predominant approach despite current recommendations favoring radial access. CI-AKI was the most frequent complication, while in-hospital mortality was 14%, mainly due to acute heart failure. Higher Killip class and CI-AKI were significantly associated with mortality.

130. Idd, S. (2025). Ambient air pollution and respiratory health among Pugu dumpsite waste pickers in Dar-es-salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Waste management is a significant public health challenge in developing countries. The Pugu dumpsite in Dar es Salaam emits harmful pollutants, including particulate matter (PM2.5, PM10), carbon monoxide (CO), ammonia (NH_3), and nitrogen dioxide (NO_2), adversely affecting the respiratory health of waste pickers. The impact of these pollutants on the respiratory health of vulnerable populations, particularly waste pickers, has remained inadequately studied. **Objective:** This study aimed to assess the extent of air pollution and its association with respiratory health among waste pickers at Pugu Dumpsite in Dar-es-Salaam. **Material and Methods:** This analytical cross-sectional study assessed air pollution and respiratory health among 377 waste pickers at Pugu dumpsite using stratified random sampling. Primary data were collected via a modified standardized questionnaire and spirometry, while secondary data included PM, CO, NH_3, and NO_2. Descriptive statistics and regression models analyzed the relationships between variables and their effects on outcomes. **Results:** Measurements of particulate matter ($PM_{2.5}$ and PM_{10}) exceeded the World Health Organization (WHO) limits during several seasons, where readings in Pugu indicated $PM_{2.5}$ levels ranging from 35 to 382 µg/m³ and PM_{10} levels between 40 and 616 µg/m³. Gaseous pollutants (CO, NH_3, NO_2) remained within acceptable short-term limits, falling below 50 parts per billion (ppb). Respiratory symptoms were prevalent among participants, with 64.7% reporting shortness of breath, 48.9% experiencing coughing, 44.4% producing phlegm, and 36.3% wheezing. Furthermore, 55% of waste pickers showed impaired lung function. Females had 32% higher odds of having impaired lung function compared to males (PR: 1.32; 95% CI: 1.04, 1.67). Participants who were underweight and overweight/obese had higher odds of having impaired lung function compared to those with a normal BMI (PR: 1.58; 95% CI: 1.17, 2.11) and (PR: 1.57; 95% CI: 1.19, 2.08), respectively. Those who reported wheezing had 32% higher odds of having impaired lung function compared to their counterparts (PR: 1.32; 95% CI: 1.05, 1.67). **Conclusion:** The study reveals a high prevalence of respiratory symptoms and reduced lung function among waste pickers at the Pugu dumpsite. Levels of particulate matter ($PM_{2.5}$ and PM_{10}) exceeding WHO guidelines further underline the hazardous environmental exposures at the site. Females, underweight, overweight/obese, and those with wheezing are more likely to have reduced lung function. Public health measures are needed to reduce air pollution exposure and protect the respiratory health of waste pickers. **Recommendations:** Upgrading the dumpsite to a

sanitary landfill, promoting sustainable waste solutions, establishing environmental monitoring systems, improving occupational health and safety, enhancing waste management practices, promoting health and nutrition programs, implementing policy and institutional actions, and encouraging further research and innovation.

131. Iddi, N. (2025). Assessment of Hospital Disaster Preparedness Capacity among Regional and District Hospitals in Zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Disasters cause widespread social, economic, and environmental disruptions that overwhelm local capacity. Hospitals play a central role in disaster preparedness, yet evidence suggests that health facilities in low- and middle-income countries remain inadequately prepared. Zanzibar, highly vulnerable to natural and man-made disasters, has limited data on hospital readiness. **Objective:** The study aimed to assess the state of disaster preparedness capacity among Zanzibar's regional and district hospitals. **Methodology:** A descriptive cross-sectional study was conducted in all 13 regional and district hospitals in Zanzibar from April to May 2025. Information was collected using a structured questionnaire adapted from the American College of Emergency Physicians Hospital Disaster Preparedness Self-Assessment Tool. The questionnaire consisted of 50 questions organized into five key sections: general hospital information and capacity, disaster management plan, emergency clinical operations, training, and communication. Additionally, direct observation and on-site interviews were conducted to validate the functionality of the equipment. **Results:** A total of 13 hospitals were assessed. Only 1 hospital (7.7%) had a written Emergency Management Plan accessible to staff. While all hospitals (100%) maintained emergency drugs and backup power, only 8 (61.5%) had alternate treatment areas, and 4 (30.8%) had functional ambulances. Training was inadequate: 6 hospitals (46.2%) provided PPE training, but none conducted annual drills or CBRNE exercises. Communication systems were partly functional; 11 hospitals (84.6%) could send alerts, but none had radios or structured backup systems. Major challenges included inadequate funding (84.6%), poor stakeholder coordination (76.9%), and insufficient trained personnel (69.2%). **Conclusion:** Disaster preparedness capacity in Zanzibar hospitals is critically low. Key gaps exist in planning, training, communication, and surge capacity. Strengthening preparedness requires urgent policy reforms, investment in training, standardized hospital guidelines, and improved communication systems.

132. Ignas, K.G. (2025). Preventive Practices for Occupational Hazards and Associated Factors Among Anaesthesia Providers at Tertiary Teaching Hospitals in Tanzania, 2024. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Anaesthesia providers routinely face occupational hazards due to the stressful working environment, continuous exposure to hazardous agents, and increased responsibilities from newer developments. Despite international societies' emphasis on safety practices, many institutions still struggle with factors like insufficient knowledge, limited access to training and

protective equipment, and extended work hours, leading to related chronic illnesses and disabilities. Addressing these factors was imperative in implementing strategies for safeguarding occupational well-being among providers. **Aim of the study:** The study aimed at assessing preventive practices for occupational hazards and associated factors among anaesthesia providers working at tertiary teaching hospitals in Dar es Salaam, Tanzania **Methodology:** An analytical cross-sectional study was conducted at Muhimbili National Hospital-Upanga and Muhimbili Orthopaedic Institute involving 156 anaesthesia providers. Data were collected using standardized, pretested, self-administered questionnaires. Preventive practices were assessed through interviews, and factors influencing these practices were evaluated with self-administered questionnaires. Data were processed and analyzed using Statistical Package for Social Sciences (SPSS) version 27. Descriptive statistics were summarized using proportions and presented with diagrams. The Pearson chisquare test determined statistical significance, and logistic regression analysis measured the strength of associations between variables, with a significance level set at p-value < 0.05 and 95% confidence level. **Results:** Only 24 (15.40%) out of 156 assessed anaesthesia providers demonstrated good preventive practices. Adequate knowledge [p(0.004); aOR(44.67); 95%CI(3.33,597)], adjusting work shifts to 10 hours or less [p(0.032); aOR(7.60); 95%CI(1.19,48.50)] and availability of essential PPE [p(0.016); aOR(9.50); 95%CI (1.52,59.09)] were notably associated with good preventive practices for occupational hazards. **Conclusion and Recommendations:** The study found poor preventive practices among anaesthesia providers, with only 15.40% reporting good practices. Notably, adequate knowledge, limiting shifts to 10 hours or less, and availability of protective equipment were significant predictors of good preventive practices. To improve occupational safety, efforts should focus on enhancing knowledge about preventive measures, implementing suitable work schedules, and ensuring a constant supply of essential PPE.

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133. Ipembe, S.J. (2025). Prevalence, Environmental and Sociocultural Influences Linked with Malaria Cases in Tandahimba District Council, Mtwara Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malaria, a life-threatening disease caused by the Plasmodium parasite, remains a major public health and economic burden, especially in sub-Saharan Africa, which contributed 94% of global malaria cases and 95% of deaths in 2022. In Tanzania, malaria prevalence stands at 8%, but regional disparities exist, with Mtwara Region recording one of the highest burdens (20%) in 2022, increasing from 15% in 2017 despite the region's goal to eliminate malaria by 2030. Tanda Himba district, in particular, has persistently high transmission despite ongoing control interventions, raising concerns about underlying environmental and socio-cultural factors to malaria transmission. **Objective:** To determine the prevalence, environmental and socio-cultural influences linked with malaria cases in the Tanda Himba district council from March to May 2025.**Methodology:** A mixed-method study using a convergent parallel approach was conducted between March and May 2025. Quantitative data were collected from 522 participants through household surveys, while qualitative data were obtained via in-depth interviews with Ward Executive Officers and the District Vector Control Officer. A multistage cluster sampling method

was used to select 522 participants from the general population in Tandahimba DC in the Mtwara region. Demographic, environmental, and sociocultural data were collected using a structured questionnaire with closed-ended questions and an in-depth interview guide. Analysis was performed using Stata version 17. Continuous variables were summarized using means and standard deviations, while categorical variables were described using frequencies and proportions. Findings were presented in tables and graphs. To examine the association between malaria cases and independent variables, a modified Poisson regression analysis was applied. Variables with a p-value less than 0.2 in the univariable analysis were included in the multivariable model, and those with a p-value of ≤ 0.05 were considered statistically significant. In qualitative thematic analysis was done by using NVivo software, and findings were integrated with quantitative results to provide a comprehensive understanding of environmental and socio-cultural factors influencing malaria cases in Tandahimba District. Results: A total of 522 participants were enrolled in the study. The mean age was 41 years (±22.52 SD). Maundo ward had the highest representation, 126 (24.1%). Males constituted the majority, 275 (52.7%), most participants had primary education, 304 (58.2%), and 225 (43.1%) were farmers. Nearly half (49.7%) lived in households with 5 to 8 members. Key environmental factors associated with high malaria included wall building material (Earth muds/grass, aPR =1.47[95% CI: 1.19-1.82] p<0.001) and open eaves (aPR=1.46 [95%CI:1.23-1.73] p<0.001 while metal sheet roofs were found to be protective (aPR=0.77[95%CI:0.69-0.86] p<0.001). Among socio-cultural factors travel history (aPR=1.28[95%CI:1.07-1.53] p=0.006) and staying outdoors at night (aPR=1.29[95%CI:1.09-1.53] p=0.003) were associated with higher prevalence of malaria, while use of mosquito net (aPR=0.75[95%CI:0.60-0.94] p=0.012), mosquito repellant (aPR=0.78[95%CI:0.65-0.93]p=0.006) and mosquito spray(aPR=0.81[95%CI:0.69-0.94] p=0.005) were found to be protective against malaria. **Conclusion:** This study revealed that environmental factors such as wall building material (earth mud/grass) and the presence of open eaves significantly increased malaria prevalence, while using a metal sheet for roofing was significantly protective. Socio-cultural factors such as travel history and staying habits outdoors at night were linked to malaria whereas using mosquito nets, mosquito repellent, and mosquito spray offered protective benefits. Effective malaria control in Tandahimba requires integrated, community-led approaches that combine environmental management and sociocultural intervention. ***Key words:*** *Malaria, environmental, socio-cultural, and Tandahimba*

134. Iteriteka, G. (2025). Readiness of healthcare providers to use the updated tool for early sepsis recognition among patients in Gitega Regional Hospitals, Burundi. Muhimbili university of health and Allied Sciences.

Abstract

Background: Sepsis is a significant global health issue that affects approximately 49 million people annually and causes around 11 million deaths worldwide. Early sepsis detection is crucial for improving patient outcomes in low-resource settings, such as hospitals in Gitega, Burundi. Complications from sepsis can often be prevented with timely recognition, and nurses are at front line for its recognition. Despite this, there is limited information on the readiness of healthcare providers to implement the updated tools for early sepsis recognition. This study aims to address

this gap to evaluate the readiness of healthcare providers in Gitega, Burundi, to utilize the tools for early sepsis recognition, like quick sequential organ failure assessment (qSOFA). **Aim:** To assess the readiness of healthcare providers to implement the updated tool for recognizing sepsis among patients in Gitega, Burundi. Methods: An analytical cross-sectional study was conducted among 130 nurses working in the emergency, medical, and surgical departments at Hôspital Régional de Gitega (HRG) and Kibuye Hope Hospital (KHH). Data were collected using a structured, pretested questionnaire that assessed socio-demographic factors, knowledge of sepsis recognition, institutional and work environmental factors, and readiness indicators (knowledge, access to guidelines, teamwork and confidence in using qSOFA). Descriptive and inferential statistics were analyzed using SPSS version 28, with significance set at $p < 0.05$. **Results:** Although 84.6% of respondents viewed early recognition of sepsis as a clinical priority, only 45.4% demonstrated readiness to use qSOFA. Knowledge gaps were prominent: just 24.6% had heard of qSOFA, 18.5% correctly identified its criteria, and 11.5% had received formal training. Institutional readiness was also low, with only 27.7% reporting access to adequate resources and 21.5% noting the presence of sepsis-related policies. Readiness was strongly associated with higher education, good knowledge, teamwork, and access to guidelines**. Conclusion:** The study highlights a significant gap between the perceived importance of early sepsis recognition and the actual readiness of nurses to implement the qSOFA tool to identify sepsis among the patients in clinical practice. Limited knowledge, lack of training, and weak institutional support remain major barriers. Strengthening structured training, clinical guidelines, and organizational commitment is crucial to enhancing sepsis recognition and improving patient outcomes in Burundi's regional hospitals. ***Keywords:*** *Sepsis, qSOFA, Nurses, Early Recognition, Readiness, Burundi, Healthcare Provide*

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135. Jabir, N.M. (2025). Understanding the implications of outsourced laboratory and radiology diagnostic services on public financial management in Zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Outsourcing has emerged as a strategic approach to address technical and financial constraints in healthcare diagnostics in low-resource settings. In Zanzibar, laboratory and radiology services were outsourced to private providers to improve efficiency and accessibility. However, systematic evidence on the model's impact on financial governance, allocative efficiency, and equitable service delivery remains scarce, raising concerns about its effectiveness and sustainability. **Objective:** This study aimed to evaluate the impact of outsourcing on the allocative efficiency of laboratory and radiology diagnostic services in Zanzibar by tracking financial flows, assessing fund utilization, and examining service delivery improvements across urban and rural public health facilities. **Materials and Methods:** A convergent parallel mixed-methods design was employed, guided by the Public Expenditure Tracking Survey (PETS) framework and underpinned by Principal-Agent Theory. The study was conducted across four stratified selected public hospitals in Zanzibar Mnazi Mmoja and Abdallah Mzee (urban), and Kivunge and Kinyasini (rural) to ensure geographic and contextual representation. Quantitative data were collected for pre- (fiscal year 2021-2022) and post-outsourcing (fiscal year 2023-2024)

periods, covering financial allocation, utilization, diagnostic test volumes, and equipment usage. Data were analyzed using Stata for descriptive statistics, paired t-tests to assess within-facility changes, and independent t-tests to evaluate urban-rural disparities. Qualitative data from 10 purposively key informant interviews were analyzed thematically using NVivo to explore operational and governance challenges. **Results:** Outsourcing led to statistically significant improvements in allocative efficiency, with the mean Allocative Efficiency Ratio (AER) increasing from 61.5% to 77.4% (p=0.013) and financial leakage decreasing from 38.5% to 22.6% (p=0.013). Diagnostic test volumes surged by 109.3% overall (p=0.032). However, gains were inequitable, urban facilities achieved significantly higher AERs (90% and 83%) and test volume growth (135.0% mean increase) compared to rural facilities (71% and 65% AER; 83.6% mean increase). Qualitative findings contextualized these disparities, revealing that delayed reimbursements, rigid contractual terms, staffing inequities, and weak oversight disproportionately hindered rural performance, despite greater relative improvements in equipment utilization rates. **Conclusion:** Outsourcing of diagnostic services in Zanzibar significantly improved financial efficiency and service output, yet these benefits were unevenly distributed. The model's success was moderated by systemic challenges, including payment delays, a lack of context-sensitive contracting, and persistent urban-rural capacity gaps. To ensure outsourcing contributes to equitable and sustainable healthcare, policymakers must prioritize financial accountability mechanisms, equitable contract design, and strengthened governance coordination.

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136. Joel, N. (2025). Acceptability Of Labour Care Guide (LCG) Among Midwives in Healthcare Facilities: A Case Study of Ilemela Municipal in Mwanza Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The World Health Organization’s Labour Care Guide (LCG) is a next-generation partograph designed to improve intrapartum care and promote woman-centered practices. Evidence from low- and middle-income countries indicates that LCG is generally feasible and acceptable to maternity care providers. Midwives have highlighted their role in enhancing accurate monitoring, critical thinking, and respectful care. However, resistance to replacing the traditional partograph, coupled with inadequate training and limited supportive supervision, raises concerns about its acceptability and consistent implementation. **Objectives:** To explore the acceptability of LCG among midwives working in healthcare facilities in Ilemela Municipal Council, Mwanza Region, Tanzania. **Material and Methods:** A qualitative exploratory case study design was employed. Twenty midwives who had received LCG training and were working in maternity wards were purposively selected as key informants. Data was collected through in-depth interviews and analyzed thematically to identify key dimensions of acceptability using Theoretical Framework of Acceptability (TFA). Findings: Midwives generally believed that LCG was a valuable tool for improving labour monitoring and maternal outcomes. Key identified benefits included enhanced tracking of fetal heart rate, timely detection of complications, and structured assessment of labour progress. Major burdens identified included increased documentation workload, staff shortages, inconsistent integration into routine practice, confusion over specific components, insufficient training, and system incompatibility, which hindered full integration, despite overall recognition of

the LCG's potential to enhance accountability and care quality. **Conclusion:** LCG is acceptable to midwives and considered beneficial for improving the quality of intrapartum care. Successful implementation requires continuous training, adequate staffing, supportive supervision, and integration into existing maternal health systems. **Recommendations:** Regular refresher training, recruitment of additional midwives to reduce workload, and quarterly supportive supervision and mentoring are essential to strengthen LCG adoption and adherence. ***Keywords:*** *Labor Care Guide (LCG), Midwives, Maternal Health, Acceptability, Tanzania, Intrapartum Care.*

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137. John, S. (2025). knowledge, perceived skills, and readiness for disaster preparedness among emergency healthcare providers in Referral Hospitals in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: A disaster is a natural or manmade devastating event that causes a serious disruption of the functioning of a community or a society with widespread human, material, economic, and environmental losses that exceed the ability of the affected community or society to cope using its resources. Emergency healthcare providers are frontline responders during a disaster, yet their level of preparedness remains uncertain in many settings. Aims: This study assessed the knowledge, perceived skills, and readiness for disaster preparedness among EHCPs working in referral hospitals in Dar es Salaam. **Methodology:** A cross-sectional analytical design was used among 218 EHCPs in referral hospitals in Dar es Salaam. Data were collected by using a structured self-administered questionnaire and analyzed by using SPSS version 25. Descriptive statistics summarized frequencies, percentages, mean, and standard deviation, while bivariate and multivariate logistic regression identified significant associations **Results:** Among the 218 participants, the mean age was 33.8±5.43 years, and nurses formed the majority (65.1%). Over half (59.6%) demonstrated adequate knowledge of disaster preparedness, with high awareness of disaster concepts and procedures, such as communication channels (94.5%) and initial assessments (96.3%). However, gaps were identified in START triage criteria (32.1%) and the decontamination procedure (51.8%). Multivariate analysis revealed that nurses (AOR=5.03, 95%CI (1.878-13.484), P=0.01), those with 1 to 5 years working experience (AOR 6.1, 95%CI (1.447-25.191), P=0.012) were significantly more likely to have inadequate knowledge. Nearly half (48.2%) of participants have a high level of perceived skill, and more than half (58.3%) of participants demonstrated high readiness to practice in a disaster situation Conclusion: While most EHCP demonstrated sufficient knowledge, perceived skills, and low disaster preparedness readiness, a significant gap remains, especially among nurses, those with less than five years of experience, and individuals with lower educational qualifications. This study highlights the critical role of referral hospitals as frontline institutions for disaster response xiv in urban Tanzania and provides insight applicable to similar low-and middle-income settings. Strengthening a targeted training program, regular disaster drills, and integrating a comprehensive disaster preparedness module into health training curricula can enhance readiness. These findings underscore the need for tailored interventions to support emergency nursing practice and ensure a competent workforce during disasters.

138. Joseph, P.M. (2025). Knowledge, attitude, and perception of air pollutants as measured by air quality index among runners in Dar es Salaam city, Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: For Tanzania and many other developing nations, air pollution is one of the main problems in such a way that humans are primarily affected, particularly youngsters and the elderly. There are many different running programs in most cities, including Dar es Salaam. These programs range from individual jogging exercises to marathon races. Some of these runner's exercise in any environment without taking the local air quality and air quality index into account. The knowledge, attitude, and perception of runners in Dar es Salaam City, Tanzania, regarding air pollutants measured by the Air Quality Index (AQI) are still little understood, despite the growing concern over air pollution and its harmful impacts on both human health and the environment. The purpose of this study is to bridge this gap by examining runners' awareness, attitudes, and perceptions of air pollutants as measured by the AQI in Dar es Salaam City. Objective: To assess the knowledge, attitude, and perception about air pollutants as measured by AQI among runners in Dar es Salaam City, Tanzania. **Methodology:** A cross-sectional study design was used, involving 392 participants selected through proportionate stratified sampling. Data collection was conducted via self-administered questionnaires between August and October 2024. Statistical analyses were performed using SPSS, employing descriptive statistics, cross-tabulations, chi-square tests, and binary logistic regression to determine associations between socio-demographic factors and knowledge levels. **Results:** The findings revealed that only 35.5% of runners had high knowledge of air pollutants and AQI. Knowledge levels were significantly associated with education, age, occupation, and running frequency ($p < 0.05$). While 76.8% of runners considered AQI monitoring important, only 38.3% believed that air quality significantly affected their running performance. A majority (76%) perceived air pollution as a serious problem, yet 52.3% still considered Dar es Salaam's air quality suitable for outdoor activities. Conclusion and Recommendation: Despite a moderate awareness of air pollution, knowledge about AQI among runners remains low, highlighting a gap between perception and actual understanding of air quality risks, hence calling for more public awareness campaigns.

139. Joshua, M. (2025). Knowledge and Attitude Towards Human Papillomavirus Screening Among Women Residing in Mbeya Region, Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer remains a major global public health concern and ranks as the fourth

most common cancer among women worldwide. Although it is both preventable and curable when detected early, it continues to pose a significant threat especially in low-resource settings. Globally, cervical cancer is the second most prevalent cancer among women after breast cancer and remains the leading cause of cancer-related deaths among women in sub-Saharan Africa. In Tanzania, it represents the foremost contributor to cancer-related morbidity and mortality among women, with an age-standardized incidence rate (ASR) of 42.1 cases and an age-standardized mortality rate of 28.6 deaths per 100,000 women. **Objective:** To assess the knowledge and attitude on human papillomavirus screening among women in the Mbeya region, Tanzania. **Methodology:** This study employed an analytical cross-sectional design to assess knowledge and attitudes toward HPV screening among women aged 25–60 years in Mbeya City, Tanzania. A multistage random sampling technique was used to select households, with one eligible woman interviewed per household. Data were collected using a structured questionnaire, and data collection was conducted electronically via Open Data Kit. Modified Poisson regression was used to estimate prevalence ratios and identify factors associated with knowledge and attitudes at a 5% significance level using Stata 15.0. Ethical approval was obtained from the MUHAS IRB and the regional authorities, whereas all ethical considerations were observed throughout the course of the study. **Results:** A total of 430 women were included in the study with median age of 34 (IQR: 29-39). Overall, only 30.2% (n=130; 95% CI: 26.1%–34.8%) of the women demonstrated adequate knowledge of HPV screening. In the multivariable analysis, women aged above 35 years (aPR=1.32; 95% CI: 1.14–1.52), those from households with formal education primary (aPR=3.26; 95% CI: 2.55–4.16), secondary (aPR=2.96; 95% CI: 1.71–5.11), and diploma/degree (aPR=3.72; 95% CI: 2.56–5.41), those who had ever been screened for cervical cancer (aPR=4.28; 95% CI: 2.19–8.17), and those who had heard of HPV screening (aPR=4.99; 95% CI: 1.36–18.41) were significantly more likely to possess adequate knowledge of HPV screening. Regards attitude, 44.9% (n=193, 95% CI: 40.2%-49.6%) were found to have a positive attitude. In the multivariable analysis, women who were employed (aPR=0.69; 95% CI: 0.51–0.95; p=0.021) and those engaged in business (aPR=0.82; 95% CI: 0.79–0.85; p<0.001) were significantly less likely to express a positive attitude toward HPV screening compared to housewives, while women with adequate knowledge showed a significantly more positive attitude (PR=1.66; 95% CI: 1.35–2.04; p<0.001). **Conclusion:** The study reveals that knowledge and attitudes toward HPV screening among women in Mbeya remain low. Age, household education level, screening history, and prior awareness of HPV testing were the predictors for knowledge, while occupation and knowledge were the predictors of attitude towards HPV among women.

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140. Joyce, J.R. (2025). Uptake Of Eye Care Services and Its Associated Factors Among Adults Attending Selected Hospitals in Ubungo District, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The uptake of eye care services is crucial in preventing avoidable blindness and visual impairment. Despite advancements in the health sector, the uptake of these services remains low in many developing countries. In Tanzania, particularly in Ubungo District, adults continue to

face challenges in accessing eye care services. Understanding the uptake and associated factors in eye care is essential for developing effective strategies to improve utilization and reduce preventable blindness. **Objective:** To determine the uptake of eye care services and associated factors among adults attending selected hospitals in Ubungo District, Tanzania. **Methods:** A cross-sectional study was conducted among 318 adult patients attending Sinza and Ubungo District Hospitals. Participants were selected using systematic random sampling. Data were collected using a structured questionnaire and analysed with descriptive statistics, chi-square tests, and logistic regression using SPSS version 20. A p-value of less than 0.05 was considered statistically significant. **Results:** From the 318 adults included in the analysis, the overall uptake of eye care services was 39.6%. After adjusting for confounders, uptake was significantly higher among adults aged 25–44 years (AOR = 7.3; 95% CI: 1.5–40.3) and females (AOR = 2.2; 95% CI: 1.1–4.5). Higher education (AOR = 19.3; 95% CI: 2.0–195.2), income above TSh 400,000 (AOR = 7.3; 95% CI: 1.4–38.8), and health insurance (AOR = 2.8; 95% CI: 1.7–4.7) were strong predictors of uptake. Adults with chronic illnesses (AOR = 2.1; 95% CI: 1.3–3.3), especially diabetes, hypertension, and HIV/AIDS, were more likely to use eye care services. **Conclusion:** The study revealed a low uptake of eye care service among adults in Ubungo District. Chronic diseases and socio-economic characteristics were an important factor related to uptake. To increase the uptake of eye care services, integrating eye care into chronic illness clinic and addressing socio-economic factors should be prioritized. Personalized messages community-focused services can increase the uptake of eye care services.

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141. Joyce, S. (2025). Assessment Of Compliance to Good Storage Practices of Medical Products in Public District Hospitals in Northern Zone, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Poor-quality medicines cause a serious public health problem in developing countries, and have an impact on the national clinical and economic burden. Good Storage are important to maintain the quality of medicines including the safety and efficacy. Improper storage leads to increase of substandard medicines. Poor quality medicines are widespread and represent a threat to health systems because they can lead to healthcare failures, such as antibiotic resistance, prolonged hospitalization and even death. Statistics estimate that over 25% of the medical products consumed in developing countries are substandard. Poor storage is among the contribution factor for inferior quality medicines. WHO in 2006 reported that 60% of cases of substandard medical products originated from developing countries and about 700,000 deaths occur yearly due to substandard antimalarial and antituberculosis drugs. **Objective:** The study aimed to assess the compliance to Good Storage Practices of medical product in Public District Hospitals in Northern zone, Tanzania. **Methodology:** A descriptive cross-sectional study was designed to encompass all 30 public district hospitals situated within the Northern Zone, specifically spanning the Tanga, Arusha, Kilimanjaro, and Manyara regions. The Northern Zone was selected from the seven zones of Tanzania based on non-probability convenience sampling approach due to geographical proximity, lack of previous studies and diverse mix of healthcare facilities that serve both urban and rural populations, offering a comprehensive and representative sample for evaluating storage

practices. All pharmacists and store keepers working in pharmacy stores were considered as the study participants. Data collection was conducted using structured questionnaires and checklists, and the quantitative data was analysed using STATA, where the relationship between variables was established and explored. **Analysis plan:** The quantitative data was analysed using STATA, Excel, and Tableau to identify connections between variables. **Results:** The study assessed compliance with Good Storage Practices (GSP) among 30 pharmaceutical personnel from public district hospitals in the Northern Zone of Tanzania. The majority of respondents were male (63.3%), aged between 31–40 years (50.0%), and held qualifications as either pharmacists (50.0%) or pharmaceutical technicians (50.0%), with most having 1–5 years of work experience (63.3%). Overall, 46.7% of facilities complied with appropriate storage facility availability and efficient use, 43.3% adhered to guidelines or standard operating procedures (SOPs), and only 26.7% met security and safety measure standards. Notably, 93.3% of participants were categorized as competent in GSP. Compliance varied across demographic subgroups, with younger and less experienced personnel demonstrating higher compliance rates compared to older and more experienced staff. **Conclusion:** This study demonstrated that compliance with GSP among public district hospitals in the Northern Zone of Tanzania was generally low, particularly in infrastructure adequacy, availability and utilization of SOPs, and implementation of safety and security measures. Although staff competency was high, this did not translate into satisfactory GSP compliance, revealing a disconnect between knowledge and practice.

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142. Juma, B.K. (2025). Prevalence and determinants of diabetic microvascular complications among adults with type 2 diabetes in the district hospitals of Pemba Island Muhimbili University of Health and Allied Sciences.

Abstract

Background: A significant worldwide health concern today is diabetes mellitus, particularly type 2 diabetes (T2DM), with Africa facing a greater burden due to high rates of undiagnosed cases and inadequate healthcare resources. The small blood vessels of diabetic patients can be affected, leading to microvascular complications in various parts of the body, such as kidney failure, painful nerve damage, and vision loss, which severely impact quality of life. In Tanzania, the prevalence of microvascular complications ranges from 50.2% to 57.6%, with diabetic retinopathy being the most common. **Objective:** To investigate the prevalence and contributing factors of diabetic microvascular complications among Adults with Type 2 Diabetes in the District Hospitals of Pemba Island. **Material and methods:** A cross-sectional analytical study was conducted among 399 adults with T2DM using a simple random sampling technique. Data were collected using structured questionnaires and clinical records. Descriptive statistics, bivariate analysis, and multivariate logistic regression were performed to identify factors independently associated with microvascular complications. **Results:** This study includes 399 respondents; the majority were female, 61.4%, and most were 40–59 years old. A substantial proportion, 71.6% resided in rural areas. In terms of education, a large majority, 76.9% had no formal education. The overall prevalence of diabetic microvascular complications was 90.7%. The most common complications were diabetic retinopathy, 85.2%, neuropathy, 74.2%, and combined neuropathy with retinopathy, 69.4%. Clinical factors significantly associated with complications included stage 2 hypertension

(p = 0.02). Participants with a monthly income of 600,001–1,000,000 TZS had significantly lower odds of diabetic complications (p = 0.005). **Conclusion:** There is a high burden of diabetic microvascular complications among adults with T2DM in Pemba, primarily driven by uncontrolled blood pressure, low socioeconomic status, and poor glycemic control. Integrated interventions focusing on early screening, blood pressure management, and socioeconomic support are critical to reducing complications in this population.

143. Juma, F.A. (2025). Fungal sensitization and sinonasal polyposis among patients with chronic rhinosinusitis attending otorhinolaryngology clinic at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: One of the common illnesses with a variety of etiologies is chronic rhinosinusitis. Fungi are one of the many causes of inflammation and its sensitization, and emerging evidence suggests that it is the main contributor to disease severity and recurrence of sinonasal polyposis, resulting in poor treatment outcomes. The fungi involved are of great diversity, influenced by both climate and geographical factors, with the highest prevalence being in warm and humid areas and low socioeconomic class. There is scarce data on fungal sensitization among patients with chronic rhinosinusitis in Tanzania. **Objective:** The primary goal of this study is to assess fungal sensitization among patients with chronic rhinosinusitis with or without sinonasal polyposis attending the otorhinolaryngology clinic at Muhimbili National Hospital. **Methodology:** A hospital-based cross-sectional study design was conducted in the department of otorhinolaryngology clinic at the Muhimbili National Hospital from October 2024 to March 2025. Fifty-nine participants older than 18 years whom a Computerized Tomography (Ct scan) was obtained and a clinical diagnosis of chronic rhinosinusitis was made based on the presence of at least two major symptoms for twelve weeks as per Task force of American Academy of Otorhinolaryngology, Head and Neck Surgery (AAO-HNS) were recruited. Enrolled participants underwent Skin Prick Test to check five distinct fungal allergens including, (Alternaria alternata, Aspergillus fumigatus, Cladosporium herbarum, Penicillium and Candida albicans) and positive and negative controls (histamine and saline), and total serum IgE titers were quantified. Data was collected in a self-designed data sheet and analyzed the Statistical Package for the Social Sciences (SPSS) software version 24. Descriptive analysis and Chi square test were performed, and p-value of <0.05 was determined as statistically significant. Confounders were mitigated by using multivariate logistic regression as the final model of data analysis. **Results:** The study enrolled 59 participants with chronic rhinosinusitis. Aged range 18-77years. Males were predominant at 61%. Fungal sensitization was detected in (n=41)69.5% of the study participants. The most common fungal allergens were Alternaria alternata at (n=24)58.5%, Aspergillus fumigatus at (n=23)56.5%. Participants aged > 50 years had a higher prevalence of fungal sensitization (n=19)86.5% found compared to those 31-50 years (n=12)52%, and this was statistically significant (p value 0.044). Fungal sensitization was in (n=)71.4% of those with nasal polyposis, no significant association between nasal polyposis and age, sex, and fungal sensitization status was established in this study. **Conclusion:** A high prevalence of fungal sensitization was observed among chronic rhinosinusitis patients, particularly those older than 50 years. Alternaria alternata and Aspergillus fumigatus were

the most predominant fungal allergens. These findings suggest the potential role of fungal allergens in the pathogenesis of chronic rhinosinusitis, and this supports the inclusion of fungal allergen testing in the diagnostic workup of patients with chronic rhinosinusitis, especially those older than 50 years. **Recommendations:** Routine screening of fungal allergens in patients with Chronic Rhinosinusitis aged above 50 years to guide management of such patients. Further studies to validate these findings by using longitudinal study designs, larger sample sizes, and specific tests e.g specific IgE, and to explore the impact of allergen avoidance and use of immunotherapy should be designed.

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144. Jumanne, J. (2025). "Impact of uterotonics on maternal and fetal outcomes among mothers delivering at health centers in Dar es Salaam Tanzania: a cohort study. Muhimbili University of Health and Allied Sciences

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Abstract

Background: Neonatal and maternal mortality remain urgent challenges in low- and middleincome countries (LMICs). The 2024 United Nations Children's Fund (UNICEF) child mortality report indicates that neonatal deaths now make up 47% of under-five deaths, up from 41% in 2000, despite an overall 44% reduction. In Sub-Saharan Africa, postpartum haemorrhage (PPH) is the primary direct cause of maternal mortality. Tanzania has a rising caesarean section rate (31.8%), exceeding the WHO-recommended range, and increasingly relies on uterotonics. While uterotonics are vital for preventing and managing PPH, improper use at lower-level facilities poses risks to maternal and fetal health. Limited evidence exists on their actual impact in Tanzanian health centers. **Aim:** To assess the impact of uterotonics on maternal and fetal outcomes among mothers delivering at public health centers in Dar es Salaam, Tanzania. **Methods:** A retrospective cohort study was conducted from April to May 2025 at five public health centers in Dar es Salaam. Postpartum women were randomly sampled using structured interviewer-administered questionnaires, supplemented with data from patient files. Eligible participants included mothers who delivered live or stillbirths at the selected centers during the study period. Data collected encompassed socio-demographic details, type and indication of uterotonic administered, mode of delivery, maternal complications, and neonatal outcomes. "Poor maternal outcomes" included PPH, caesarean section following labor induction or augmentation, or maternal death. "Poor fetal outcomes" involved stillbirth, low Apgar score ((<7 at 5 minutes), or early neonatal death. Data were double-entered, cleaned, and analyzed using SPSS version 26. Descriptive statistics summarized baseline characteristics. Relative Risk (RR) with 95% confidence intervals (CI) was estimated via log-binomial regression. Associations were considered significant at $p<0.05$. **Results:** Out of 540 respondents, 447 (82.7%) were aged 20–34 years, with a median age of 26 years (IQR 23–30). The majority were married (369, 68.3%), had attained secondary education (276, 51.1%), and were self-employed (349, 64.6%). Poor maternal outcomes were recorded in 43 (8.0%) participants, significantly higher among uterotonic recipients (33.3% vs 2.4%; adjusted RR 13.31, 95% CI 6.20–28.55, $p<0.001$). Poor fetal outcomes occurred in 10 (1.9%), more frequent among those exposed to uterotonics (4.2% vs 1.5%; adjusted RR 2.45, 95% CI 0.71–8.39, $p=0.160$), though this was not statistically significant. **Conclusion:** Uterotonic exposure during labor in lower-level health facilities was strongly associated with adverse maternal outcomes,

while fetal risks were higher but not precisely estimated. These results indicate that inadequate monitoring, inconsistent guideline adherence, and limited emergency obstetric capacity may increase risks. Enhancing provider training, supervision, and preparedness for obstetric emergencies is crucial to ensure the safe use of uterotonics in Tanzania

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145. Juster, J. (2025). Prevalence, Laterality, Types and Mechanisms of Frontal Sinus Fractures Among Patients with Head Injury Who Underwent Computerized Tomography Scan at Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Science.

Abstract

Background: Frontal sinus fractures, comprising 5%–15% of facial fractures globally, pose significant risks like cerebrospinal fluid leakage and mucocele formation, and often require multidisciplinary intervention. These injuries occur predominantly in young males following high-velocity impacts such as road traffic accidents, assaults, or falls. In Tanzania, head injuries represent a major public health burden. A study conducted at Mnazi Mmoja Hospital in Zanzibar reported a traumatic brain injury prevalence of 57.1%, with road traffic accidents being the leading cause. Despite this high burden, there is limited studies focusing specifically on the prevalence, laterality types and mechanism of frontal sinus fractures in Tanzania. **Objectives:** The aim of the study was to determine the prevalence, laterality, types and mechanisms of frontal sinus fractures among patients with head injuries who underwent computerized tomography scan at Muhimbili Orthopaedic Institute (MOI). **Methodology and Materials:** A hospital based retrospective cross-sectional study was employed to obtain data from adult patients who underwent computed tomography scan of the head at MOI between January 2023 to January 2024. Computed tomography scan records of eligible patients aged 18 years and above with documented head trauma were included. Data was analysed using Statistical Package for Social Sciences version 27. Descriptive statistics were used to summarize the demographic characteristics and determine the prevalence, laterality, types, and mechanisms of injury related to frontal sinus fractures. Association between fracture patterns and variables such as age, sex, and mechanism of injury were assessed using chi-square or Fisher's exact tests, as appropriate and p-value <0.05 was considered statistically significant. **Results:** A total of 324 computed tomography scans of the head belonging to patients aged between 18–69 years were reviewed; median age 33 years, interquartile range 26–44 years. Most patients were males 278(85.8%), with a male-to-female ratio of 6:1. The prevalence of frontal sinus fractures was 34(10.5%), highest among males 31(11.2%) and those aged 18 35 years 22(11.6%). Left-sided fractures were most common 18(52.9%), followed by right sided 11(32.4%) and bilateral 5(14.7%), the latter seen only in males. Type 2 fractures (anterior and posterior wall) were most frequent 18(48.5%), especially in males 17(54.8%), while Type 1 fractures (anterior wall only) were more common in females 2(66.7%). Motor traffic accidents were the leading cause of head injury 26(76.5%), while assaults 8(23.5%) were significantly associated with older age (>53 years, p = 0.012). No significant association was found between fracture type and mechanism of injury. **Conclusion and Recommendations:** Frontal sinus fractures predominantly affect young adult males in Tanzania, largely due to MTAs, especially those involving motor vehicle accidents. The high proportion of complex, left-sided fractures

highlight the role of high-impact trauma. Despite their clinical significance, Frontal sinus fractures may be underdiagnosed in resource-limited settings due to limited imaging capacity and surgical expertise. Strengthening diagnostic infrastructure, road safety enforcement, and multidisciplinary care protocols is essential for improved outcomes of frontal sinus fractures.

146. Ka'bange, H.B. (2025). Sexual dysfunction among patients with lumbar degenerative disease following post decompression and stabilization at Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sexual dysfunction due to lumbar degenerative disease is common and often results from chronic low back pain caused by the gradual degeneration of intervertebral discs. This degeneration, which may begin as early as age 18, leads to pain and mechanical limitations that significantly affect sexual activity and function. Fortunately, surgical interventions like decompression and posterior lumbar fusion (stabilization) have proven effective in alleviating symptoms. By relieving nerve compression and restoring spinal stability, these procedures not only reduce back pain but also contribute to meaningful improvements in sexual function **Objective:** To determine sexual dysfunction among patients with lumbar degenerative disease: post decompression and stabilization **Methodology:** This was a cross-sectional observational study involving 37 sexually active adult patients (aged ≥18 years) who underwent decompression and stabilization surgery for Lumbar degenerative disease at Muhimbili orthopaedic Institute between July and December 2024. Consecutive sampling was employed. Data were collected using a structured questionnaire incorporating the International Index of Erectile Function (IIEF) for men and the Female Sexual Function Index (FSFI) for women. Descriptive and inferential statistics were used for data analysis via SPSS.**Results:** The prevalence of sexual dysfunction was found to be 35.94% in males, 46.1% in females. Among males, the most affected domains were sexual satisfaction (50.0%) and desire (43.7%), while in females, orgasm (66.7%) and arousal (57.1%) were most commonly affected. Statistically significant associations were found between sexual dysfunction and factors such as age, education level, occupation, and health insurance status. **Conclusion**: Sexual dysfunction is highly prevalent among patients with Lumbar degenerative disease, even after surgical intervention. Sociodemographic factors play a significant role in sexual health outcomes. These findings underscore the need for routine sexual function assessment and integrative post-operative care addressing sexual health.

147. Kaale, E.N. (2025). Assessment of factors for achieving target activated clotting time following the use of unfractionated heparin in patients undergoing open heart surgery at Jakaya Kikwete cardiac Institute, Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Unfractionated heparin is an essential anticoagulant, widely used in surgeries, especially open-heart surgery procedures, to prevent thromboembolism, though dosing requires precise adjustment to avoid excessive bleeding or clotting risks. Activated clotting time (ACT) is

commonly monitored to assess heparin effectiveness in real time. Despite the role of ACT in guiding the procedure of open-heart surgery there is scarcity of data on pattern and factors affecting ACT among patients undergoing open heart surgery in Tanzania.**Aims:** To determine heparin dose and associated factors among patients undergoing open heart surgery at Jakaya Kikwete Cardiac Institute in Dar es Salaam, Tanzania **Material and method:** This study employed an analytic cross-sectional design. The study targeted 69 adult patients undergoing open heart surgery at Jakaya Kikwete Cardiac Institute (JKCI) from March 2025 to June 2025. Data collection combines patient interviews, record reviews, and laboratory results, with ACT values and unfractionated heparin doses being central. SPSS analysis included descriptive statistics, chi-square tests, t-tests, and multivariate logistic regression to identify independent factors correlated with achievement of target ACT. **Results:** The study population (n = 69) had a median age of 41 years, with 36 patients (52.2%) female, and 22 patients (39.1%) aged 18–35 years. Most patients 35 (50.7%) had a normal BMI (median 24.5 kg/m²), and 55 patients (79.7%) had one pre-existing condition, commonly hypertension 48 (69.6%). Valve surgeries dominated about 12 patients (72.5%), with 63 patients (91.3%) of cases elective. Target ACT was achieved after initial unfractionated heparin dosing in 54 patients (78.3%), while 14 patients (20.3%) required additional doses. Factors significantly associated with ACT attainment included age 36–55 years (AOR = 1.81, 95% CI: 1.01–1.37, p = 0.030), having one pre-existing condition (AOR = 1.50, 95% CI: 1.23–3.64, p = 0.026), and normal PTT (AOR = 2.13, 95% CI: 1.98–12.31, p = 0.014). Prior unfractionated heparin use (AOR = 0.45, 95% CI: 0.38–0.86, p = 0.048) and normal platelet count (AOR = 0.86, 95% CI: 0.76–0.97, p = 0.021) were associated with lower odds of reaching target ACT. **Conclusion:** This study shows that while standard weight-based dosing of unfractionated heparin allows most patients to achieve therapeutic ACT, a considerable number still require individualized adjustments. Key factors influencing ACT outcomes include patient age, preoperative coagulation profile, platelet count, comorbidities, and prior heparin exposure. ***Keyword:*** *Activated Clotting Time, Heparin, Open heart Surgery, and Anticoagulation.*

148. Kabeho, M. (2025). Clients' satisfaction with services at the infectious disease center at Muhimbili University of Health and Allied Sciences.

Abstract

Background: The prevalence of infectious disease in sub-Saharan Africa presents a difficult public health challenge burden of infectious diseases in the region. Diseases like tuberculosis, HIV/AIDS, malaria, neglected tropical disease, and emerging threats such as Ebola, yellow fever and COVID-19 significantly impact the region. Clients engaging with infectious disease Centers face multiple obstacles that hinder their participation and influence their outcomes. **Objective:** This study aims to conduct an assessment on determinants of the client satisfaction with service quality at the Infectious Disease Center of Muhimbili University of Health and Allied Sciences. **Methods:** The study used hospital based cross sectional research study; applying a quantitative methods of data collection and analysis. Research was conducted at the Infectious Disease Center at Muhimbili University and Health Allied Science. A stratified random sampling technique was employed, where a sample of 278 clients attending at IDC was selected. A SERVIQUAL tool with 22 items was used to collect data from the selected respondents. The Statistical package for Social

Science (SPSS) version 20 software was used to conduct an analysis of the data collected. **Results:** The findings revealed that clients' perceptions of service quality were influenced more by empathy as their critical dimension with the percentage of 34.4%, followed by assurance and responsiveness 31.2% and 30.9% and the least dimension was tangibles with 27.7%. Also, the findings showed 85.6% were not satisfied while 14.4% were satisfied with the service. While assessing the gap between clients' expectations and perceptions attending IDC for obtaining health services, all the dimensions had negative median gap score indicating that the service clients received was below their expectations, thus leading to dissatisfaction. Finally, the study found all the five service quality dimensions fell short of what the clients expected indicating that all the dimensions are identified as the possible areas for improvement at IDC.**Conclusion:** This study assessed service quality and client satisfaction at IDC using the SERVQUAL model. It examined how IDC's clients perceive service quality and assesses the relevance of the SERVQUAL model in their context, using its dimensions to gauge health service quality. Clients attending IDC perceived the quality of health services to be below their expectations across all five SERVQUAL dimensions, with empathy emerging as the most influential factor in their perception of service quality. Understanding client perceptions of service quality and effectively measuring it can aid IDC's management in providing reliable health service and improving service quality.

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149. Kabelege, P. (2025). Perceived influence of social media platforms on hiv self-testing behaviours among young university adults in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: In Tanzania, 60% of young adults aged 15 to 24 are unaware of their HIV status. The World Health Organization (WHO) advocates for HIV self-testing (HIVST) as a strategy to increase testing uptake and reduce undiagnosed cases. Digital platforms, such as social media (SM), are increasingly used globally to promote HIV preventive behaviors, including testing. However, little is known about the influence of SM on HIVST among young adults in Tanzania. **Objective:** This study aimed to assess the perceived influence of HIV testing messages on social media platforms on HIV self-testing behaviors among university students aged 18–24 in Dar es Salaam, Tanzania. **Methodology:** An analytical cross-sectional study was conducted among students aged 18–24 from Kampala International University in Tanzania (KIUT) and the Dar es Salaam Institute of Technology (DIT). Data were collected using self-administered questionnaires from March to April 2025. Multistage cluster sampling was used to select participants. Descriptive statistics, including means, standard deviations, and percentages, were computed. Chi-square tests and logistic regression analyses were used to assess associations between predictor variables and HIV self-testing ($p < 0.05$, 95% CI). **Results:** A total of 365 participants were included in the study, 193 from DIT and 172 from KIUT. The overall proportion of HIVST was 21%. The proportion was higher (80%) among participants exposed to HIV testing messages on SM compared to those not exposed (20%). In multivariable analysis, exposure to HIV testing messages on SM was significantly associated with HIV self-testing (AOR = 12.0; 95% CI: 2.41–24.52; $p < 0.01$). Limited knowledge of how to use HIVST kits was identified as the main barrier to self-

testing. **Conclusion:** Exposure to HIV testing messages on social media significantly increases the likelihood of HIV self-testing among young adults. This highlights the critical role of social media as a platform for promoting HIV testing. To improve uptake of HIV self-testing, targeted strategies should focus on expanding digital outreach and addressing knowledge gaps related to HIVST kit use among youth.

150. Kadogosa, N. E. (2025). Factors contributing to home delivery among HIV positive antenatal care booked women in Longido district, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: National and International guidelines, including those from the World Health Organization, recommend facility-based deliveries for all pregnant women, especially those living with HIV, to reduce the risk of mother-to-child transmission. In Longido District, Arusha region, although over 70% of HIV-positive women attend antenatal care, the prevalence of home delivery remains high at 67%. The reasons for this have not been previously explored. **Aim/Broad objective:** To explore factors contributing to home delivery among HIV-positive antenatal care-booked women in Longido District. **Material & Methods:** A qualitative case study was conducted involving in-depth interviews with 16 HIV-positive women who had attended ANC but delivered at home, and key informant interviews with 3 healthcare providers (DRCHCo, DACC, RCH in-charge). Data were transcribed, translated and analyzed thematically using Braun and Clarke's framework. **Findings:** Key barriers to facility-based delivery were found at multiple levels. Individual-level factors including fear of stigma, discrimination, fear of disclosure to family members, previous uncomplicated home births, limited knowledge on the benefit of skilled birth attendants. Organizational factors included perceived disrespectful care during ANC visit due to HIV-positive status. Community and environmental factors included desire to conform to cultural norms of endurance, HIV-positive status notwithstanding, poor support systems, HIV-related neglect, and inadequate transportations further contributed to home delivery. **Conclusion:** A complex interplay of factors contributes to home delivery among HIV-positive women in Longido District. At individual level fear of HIV-related stigma and discrimination, fear of disclosure to family, prior successful home births, and limited awareness of the benefits of skilled birth attendance significantly influenced women's decisions to deliver at home. At the organization perceived disrespectful care during ANC visit discouraged women from seeking facility- based delivery. At the community and environmental level, desire to conform to cultural norms of endurance, HIV-positive status notwithstanding, poor support systems and inadequate transportations further contributed to home delivery. Multi-level interventions are needed to promote facility-based delivery and reduce vertical HIV transmission. **Recommendation:** Strengthening health education, respectful care training, and culturally sensitive outreaches are key to promote skilled birth attendance. Investment in maternity waiting homes and mobile tracking systems can enhance support and access for HIV-positive women.

151. Kaguo, E.B. (2025). Cardiac thrombosis: Clinical characteristics and outcomes among adult patients admitted at Jakaya Kikwete Cardiac institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The complications of cardiac thrombosis are mainly stroke and pulmonary embolism, which may end up in death. Patients with heart failure, atrial fibrillation, valvular heart disease, and myocardial infarction are at risk for developing cardiac thrombosis. Despite its significance, there is limited data in the magnitude, clinical characteristics and outcomes of cardiac thrombosis among patients admitted at the Jakaya Kikwete Cardiac Institute (JKCI). **Objective:** To assess the prevalence, clinical characteristics, and outcomes of cardiac thrombosis in adult patients admitted at JKCI. **Methodology:** This prospective study included adults aged ≥18 years admitted to JKCI. Data were collected using a structured questionnaire covering socio-demographics, clinical characteristics, and risk factors. A 12-lead resting ECG was used to assess for atrial fibrillation, and transthoracic echocardiography assessed cardiac thrombosis, ejection fraction, and ventricular and atrial chamber size. Patients with cardiac thrombosis were followed up for outcomes, namely pulmonary embolism, stroke, or limb ischemia on days 14 and 30, which were confirmed via Computed Tomography scan. Thrombus resolution was assessed by echocardiography on day 30. **Results:** A total of 293 patients were enrolled of which 18(6.1%) had cardiac thrombosis; the thrombus was located in the left ventricle in 10 (56%). Most patients with cardiac thrombosis 15(83.3%) were aged ≤65 years, 8(44.4%) had hypotension, 8(44.4%) and 9(50%) were in New York Heart Association class III and IV, respectively at admission. The mean Left Ventricular Ejection Fraction (LVEF) was 40.8±17.2%, with over half 10(55.6%) having reduced ejection fraction. The mean left ventricular diameter during diastole (LVIDd) was 52.7±9.2 mm, and the mean left atrial diameter during systole of 45.1±9.2mm, with 14(77%) having dilated left atria. The underlying cardiac disease were ischemic heart disease 7(38.9%), atrial fibrillation 3(16.7%) and rheumatic heart disease 3(16.7%). Of the 16 patients with cardiac thrombus and completed follow-up 13(81.3%) had resolution, while 1(6.7%) had pulmonary embolism, 1(6.7%) had ischemic stroke, and 2(11.1%) died. **Conclusion:** Cardiac thrombosis is not uncommon among hospitalized patients, particularly those with underlying heart disease, presenting with hypotension and advanced NYHA class, dilated heart chambers, and lower ejection fraction. The resolution rate is high with anticoagulants within 30 days, though complications may still arise within this period.

152. Kahamba, J. G. (2025). Anatomical site analysis and the association between laterality and histopathological diagnosis of sinonasal polyposis at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sinonasal polyposis (SNP) is a chronic inflammatory disease of the nasal and paranasal mucosa with unclear etiology. Diagnosis relies on clinical and radiological assessment, but histopathology remains the gold standard while management may be medical or surgical. This study examines location of sinonasal polyps and the relationship between polyp laterality and

histopathological findings. **Objective:** To determine the anatomical sites of sinonasal polyps and evaluate the association between laterality and histopathological diagnosis among patients treated at Muhimbili National Hospital. **Methodology**: Hospital-based, cross-sectional, retrospective study of patients who underwent sinonasal polypectomy via Functional Endoscopic Sinus Surgery plus biopsy was conducted from September 2023 to September 2024. Standard histopathological request forms with clinical diagnosis of sinonasal polyps were retrieved in the Central Pathology Laboratory, followed by identification of the corresponding histopathological diagnoses as reported in Jeeva software. Then, the principal investigator and radiologist assessed respective preoperative nasal and Paranasal Sinus Computed Tomography Scans in multiple planes to determine the involved anatomical sites and laterality of sinonasal polyps. Collected data was analyzed using Statistical Package for Social Sciences version 27, with a p-value of <0.05 considered statistically significant. **Results:** Among 42 patients (mean age 41 ± 18 years; with age ranging from 12 to 70 years, male-to-female ratio 1.2:1), the maxillary sinus was most frequently affected (83.3%), with bilateral involvement in 52.4% of cases. Unilateral polyps showed a higher prevalence of neoplastic changes, including all malignancies. Inflammatory polyps predominated (76.2%). Laterality was significantly associated with histopathological diagnosis ($p = 0.04$). vi **Conclusion:** The study found that most sinonasal polyps involved the maxillary sinus and were predominantly bilateral. Routine histopathological examination is essential, as bilateral polyps are usually inflammatory, whereas unilateral ones show a wider spectrum and carry a higher risk of neoplastic or malignant changes.

153. Kahuru, B.S. (2025). Prognostic Utility of The Rotterdam Computed Tomography Score for Outcomes in Adult Traumatic Brain Injury Patients at Tertiary Hospitals in Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Traumatic Brain Injury (TBI) is a significant health challenge worldwide, with its prevalence on the rise worldwide, notably in low- to middle-income countries like Tanzania. Spanning from mild concussions to severe trauma, TBIs encompass a spectrum of severity levels, each characterized by distinct pathophysiological mechanisms. Computed Tomography (CT) imaging, particularly leveraging the Rotterdam CT Score, holds pivotal importance in gauging the scope and nature of intracranial injuries. Despite its widespread recognition, the specific relevance of the Rotterdam CT Score in adult TBI patients at a Tertiary hospital in Tanzania remains relatively underexplored. **Main Objective:** The main purpose of this study was to determine the prognostic utility of the Rotterdam CT Score for outcomes in adult traumatic brain injury patients at Tertiary hospitals in Tanzania. **Methodology:** A hospital-based prospective cross-sectional study was undertaken at Muhimbili Orthopedic Institute (MOI) and Muhimbili National Hospital-Mloganzila in Dar es Salaam, Tanzania. The study consecutively enrolled all adult patients presenting with moderate to severe traumatic brain injury (TBI) who had available CT scan images (227) from August 2024 to March 2025. Collected data encompassed socio-demographic variables, CT scan findings, Rotterdam CT scores, and clinical outcomes. Functional outcomes were assessed one month after the injury using the Glasgow Outcome Score. All data were coded and analyzed using SPSS version 23; descriptive statistics and chi-square tests for single

proportions were conducted. A p-value of less than 0.05 was considered statistically significant. **Results:** Of the 227 participants in the study, 205 (90.3%) were male, and 22 (9.7%) were female, with a mean age of 35.9 years. Road traffic accidents were the primary cause of injury, responsible for 81.1% (184) of cases. Severe traumatic brain injury was identified in 91 participants (40.1%). The most common CT scan finding was brain contusion, present in 52.4% of patients, followed by skull fractures (37.0%), subdural hematoma (36.1%), midline shift (35.7%), subarachnoid or intraventricular hemorrhage (33.0%), basal cistern compression (31.7%), and epidural hematoma (25.1%) The most common Rotterdam CT score was 2, observed in 89 participants (39.2%), followed by scores of 3 (29.1%), 4 (15.4%), 5 (8.8%), 1 (7.0%), and 6 (0.4%). The 30-day mortality rate was 39.2%. Good lower and upper recovery was achieved by 61.5% and 66.5% of participants, respectively. Mortality increased with higher Rotterdam scores, recorded at 14.3%, 23.7%, 42.6%, 62.5%, 65.0%, and 100% for scores of 1, 2, 3, 4, 5, and 6, respectively (P = 0.001). A greater proportion of patients with higher Rotterdam scores also experienced lower and upper disability (P = 0.001 for both). **Conclusion:** This study demonstrates that road traffic accidents are the predominant cause of severe traumatic brain injury, primarily affecting middle-aged males. The Rotterdam CT score proved to be a valuable prognostic tool, with higher scores strongly associated with increased 30-day mortality and greater disability. Most patients had moderate Rotterdam scores, and while a majority achieved good recovery, outcomes worsened significantly as the score increased. Future research should involve larger, multicenter prospective studies across various healthcare settings. The Rotterdam CT scoring system should be incorporated into radiological reports for TBI patients at all hospitals in Tanzania.

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154. Kaijage, G. G. (2025). Referral practices and 24-hour outcomes of patients referred from Public Regional Hospitals to National Hospitals in Dar es Salaam. Muhimbili university of health and Allied Sciences.

Abstract

Background: Efficient and timely referral systems are essential in ensuring critically ill patients receive appropriate care at higher level facilities. In Tanzania, public regional hospitals play a pivotal role in referring patients to national hospitals. However, gaps in workload, referral patterns and acuity of referred patients are not well documented. **Methodology:** A prospective cohort study was conducted over a month period in 2025 at Amana, Temeke, and Mwananyamala hospitals. Consecutive enrollment was done on patients referred by ambulance to national hospitals. Data was collected using structured questionnaires which comprised of referral details, acuity classification based on Emergency Medical Association of Tanzania triage system, and 24-hour outcomes. Data was then analyzed using Statistical Package for the Social Sciences which was summarized as frequencies and percentages, continuous variables were summarized as mean with Standard Deviation as a central measure of tendency. **Results:** A total of 384 patients were enrolled. Over half of the referrals (55.7%) were classified as Emergency (Red), indicating high acuity. The majority of referrals occurred on weekdays, with Mondays contributing the highest volume. Time-of-day analysis revealed that Amana referred mostly in the morning, Mwananyamala in the evening, and Temeke in the afternoon. Within 24 hours, 84.6% of patients were admitted, 7.6% discharged, and 7.8% died. Intensive Care Units (ICU) referred patients had

the highest mortality. Key challenges included transport delays (41.1%), staff shortages (16.7%), and lack of Intensive Care Units beds (15.9%). **Conclusion:** The study highlights significant referral workload and high acuity among patients transferred from regional to national hospitals. Despite timely decision-making at the referring hospitals, post-referral delays and systemic inefficiencies contributed to adverse outcomes. Strengthening ambulance response systems, interfacility coordination, and after-hours referral capacity is crucial to improve patient outcomes.

155. Kaitaba, F.T. (2025). Assessing barriers and enablers to implementing Goal-directed perfusion in cardiac surgery at Jakaya Kikwete cardiac Institute, Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Goal-Directed Perfusion (GDP) is an individualized, patient-centered approach that uses continuous monitoring to optimize oxygen delivery during cardiopulmonary bypass (CPB). Unlike Traditional Conventional Perfusion (TCP), GDP involves real-time adjustments based on key physiological parameters such as oxygen delivery (DO2), oxygen consumption (VO2), mean arterial pressure (MAP), blood flow rate, lactate levels, mixed venous oxygen saturation (SvO2), temperature, hematocrit, and hemoglobin. This strategy aims to improve hemodynamic stability and reduce the risk of organ dysfunction. However, being a relatively new technique, GDP still presents knowledge gaps in Tanzania, particularly in terms of evidence-based outcomes, the barriers to its routine clinical use, and the factors that could support its implementation have not been systematically evaluated. **Objective of this study:** The study aimed to assess the barriers and enablers to implementing Goal-Directed Perfusion (GDP) in cardiac surgery at the Jakaya Kikwete Cardiac Institute (JKCI). It involved healthcare professionals, including perfusionists, surgeons, anesthesiologists, and nurses, as well as patients undergoing cardiac surgery. By exploring current practices, challenges, and supportive factors, the study sought to generate insights to guide strategies for improving perfusion management and patient outcomes at JKCI.**Methodology:** The Jakaya Kikwete Cardiac Institute was the site of this hospital-based observational cross-sectional study. Data was collected using questionnaires, checklists, and patient files, then analyzed using SPSS version 27. Descriptive statistics (frequency, percentage, standard deviation, pie charts, and bar charts) and inferential statistics (Chi-square test at $p<0.05$and logistic regression) were applied. Ethical approval was obtained from the MUHAS Research and Publications Committee. **Results:** In a study involving 100 patients who underwent open-heart surgery, GDP was significantly associated with Training ($p < 0.0001$), experience ($p = 0.0310$), and familiarity with GDP ($p < 0.0001$), as well as achievement in clinical practice during the conduction of Cardiopulmonary bypass. Multivariable logistic regression confirmed formal training (OR =6.17, $p = 0.0006$) and 5-10 years of experience (OR = 4.67, $p = 0.0310$) as independent predictors. Also total of 16 healthcare providers participated in the study, comprising perfusionists (31.25%), cardiothoracic surgeons (25.00%), anesthesiologists (25.00%), and nurses (18.75%). The majority had 5-10 years of cardiac surgery experience. While 43.75%were very familiar with Goal-Directed Perfusion, only 25% received formal training, and81.25% agreed that GDP improves patient outcomes. **Conclusion:** The study highlights the beneficial impact of Goal-Directed Perfusion (GDP), demonstrating its positive effect on key perfusion parameters during all phases of cardiopulmonary

bypass. It also identifies the extent of GDP implementation and key enablers for success, including structured training, clinical evidence, administrative support, and improved monitoring technologies.

156. Kakikulu, E.M. (2025). Factors associated with high risk of developing pressure ulcers among ICU patients at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pressure ulcer, also called bed sore is an area of localized damage to the skin and underlying tissue usually over a bony prominence caused by pressure, shear, friction, or a combination of these. Post-operative patients are particularly vulnerable to developing pressure ulcers due to prolonged immobility, postoperative pain, and the use of medical devices. Pressure ulcers remain one of the major health problems around the world, for every 1,000,000 patients who develop Pressure sores, 65,000 die from its complications, making this a major health challenge worldwide. **Aim:** The study aimed to determine the factors associated with a high risk for pressure ulcer development among adult patients in ICU at MNH (Upanga and Mloganzila) from September 2024 to February 2025. **Methodology:** This was a hospital based. Prospective analytical cross-sectional study. Done at MNH. Patient information's was collected through daily ICU observation charts and patient examination. Prevalence ratio was calculated by logistic regression to assess association as well to control for confounding variable, p value <0.05 was considered significant were computed by SPSS version 27 **Results:** The study involved 216 ICU patients with a mean age of 45.6 ± 18.4 years, mostly females (58.3%) and married (56.5%). Nearly half (47.2%) were aged 25–50 years, and most were admitted to medical ICUs (47.2%). The prevalence of pressure ulcers was 19.4%, and 52.3% were at high risk. Significant predictors included no formal education (PR = 2.45; 95% CI: 1.26–4.77; p = 0.006), history of stroke (PR = 3.28; 95% CI: 2.01–5.35; p = 0.002), diabetes (PR = 2.05; 95% CI: 1.08–3.88; p = 0.026), and chronic kidney disease (PR = 2.01; 95% CI: 0.98–4.12; p = 0.051). Most high-risk patients (98.2%) used air mattresses, 85.8% were repositioned 3–4 times daily, and 70.3% used coconut oil as a skin barrier. **Conclusion:** Pressure ulcers remain a common problem among ICU patients, especially those with low education and chronic conditions like stroke, diabetes, and kidney disease. Despite widespread use of preventive measures, their consistency needs improvement. Strengthening prevention practices could reduce ulcer pressure risk and improve patient outcomes.

157. Kaliati, M. E. (2025). Effect of multimodal training on nurses' knowledge, attitude and perceived confidence in managing in-hospital cardiac arrest at Mzuzu Central Hospital. . Muhimbili University of Health and Allied Sciences

Abstract

Background: In-hospital cardiac arrest (IHCA) is a critical medical emergency requiring prompt and effective intervention. Nurses, often the first responders, play a pivotal role in initiating basic

life support (BLS) and advanced cardiac life support (ACLS) measures. Their knowledge, attitudes, and perceived confidence significantly influence patient outcomes during such emergencies. However, there is limited evidence on the effectiveness of nurse training programs in resource limited settings like Malawi, where critical care resources and opportunities for continuing professional development are scarce. This gap highlights a significant need for research into effective training strategies in such environments. **Objective:** This study evaluated the effectiveness of multimodal training on nurses' knowledge, attitudes and perceived confidence in managing IHCA at Mzuzu Central Hospital, Malawi**. Methods:** A quasi-experimental design was used to evaluate the effectiveness of a training program consisting of lectures discussions, case discussion, stimulation sessions, one-on- one discussion (facilitator and individuals) and printed departmental guidelines. The study included the whole population at the chosen departments and single-group pre-test and post-test design was employed. A structured pre-test questionnaire assess nurses' baseline knowledge, attitudes, and confidence. Following a focused training intervention on IHCA management, participants completed a post-test questionnaire, with the same questions as in the pre-test. Data was analyzed using descriptive and inferential statistics, including paired t-tests, to evaluate changes between pre- and post-training and follow up scores. A significance level of $p < 0.05$ was used to determine statistical significance. The study involved nurses from critical units, including the ICU, Emergency Department, Theatre and High Dependency Units. **Results:** The study revealed that nurses initially demonstrated limited knowledge, with a mean score of 48.8% (SD: 15.5) and only one nurse passing the benchmark score of 84%. Following training, their knowledge significantly improved, with 48 nurses passing and a mean score vi increase to 71.2% (SD: 14) post-test ($p<0.001$). This improvement was sustained at follow-up, with 68 nurses passing and a mean score of 93.3% (SD: 13.8) ($p<0.001$ from post-test). While attitude scores showed a slight increase from 4.2 pre-test to 4.4 post-test and 4.5 at followup, these changes were not statistically significant ($p=0.176$ and $p=0.326$, respectively). Perceived confidence also showed a minor, non-significant increase only at follow-up, from 4.4 pre-test/post-test to 4.6 ($p=0.179$). **Conclusion:** The findings of this study indicates that comprehensive training program significantly improved nurses' knowledge of cardiac arrest management, and this enhanced knowledge was well-retained over time. However, despite observed increases in attitude and perceived confidence, these changes were not statistically significant. This suggests that while the training successfully boosted cognitive understanding, additional or different strategies might be needed to achieve a significant shift in nurses' attitudes and confidence regarding cardiac arrest

158. Kalilo, H. (2025). Prevalence and factors associated with burnout among nurses at Mwananyamala Regional Refferal Hospital, Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Burnout among nurses is a significant global concern, adversely affecting their well-being, job performance, and patient care. Globally, healthcare workers, including nurses, face significant burnout rates, with Sub-Saharan Africa experiencing rates as high as 51%. In Tanzania, the evolving healthcare landscape and ongoing challenges such as resource limitations and high

patient loads exacerbate the risk of burnout among nurses. **Objective:** This study aimed to determine the prevalence of burnout and identify the personal and workplace factors associated with burnout among nurses at Mwananyamala Regional Referral Hospital in Tanzania. **Methodology:** This study employed a descriptive cross-sectional design to determine the prevalence of burnout and to assess associated factors among 310 nurses at Mwananyamala Regional Referral Hospital. Data were collected using the Maslach Burnout Inventory-Human Services Survey to assess the three components of burnout, which include emotional exhaustion, depersonalization, and low personal accomplishment. Stata Software was used for analysis, where both descriptive and inferential statistics were done, with statistical significance set at p-value < 0.05. Bivariate and multivariate modified Poisson regression analysis was done to identify associations between burnout and various socio-demographic, personal, and workplace factors. **Results:** Among the 310 nurses, the prevalence of burnout among nurses was 43.5% (n=135). Emotional exhaustion was reported by 187 nurses (60.3%), depersonalization by 158 nurses (50.9%), and low personal accomplishment by 177 nurses (57.1%). Significant personal factors associated with burnout included male gender (adjusted prevalence ratio–aPR = 1.34, 95% confidence interval–CI: 1.05 - 1.70), having more children (aPR = 1.36, 95% CI: 1.25 - 1.49), alcohol use (aPR = 1.36, 95% CI: 1.08 - 1.72), and chronic illness (aPR = 1.44, 95% CI: 1.10 - 1.88). Workplace factors such as conflict at work (aPR = 1.87, 95% CI: 1.48–2.36) and job dissatisfaction (aPR = 1.60, 95% CI: 1.38–1.87) were also significantly associated with burnout. **Conclusion:** This study found a high prevalence of burnout among nurses, with 43% experiencing burnout. Factors associated with a higher likelihood of burnout included male gender, having more children, alcohol use, chronic illness, workplace conflict, and job dissatisfaction. Targeted interventions such as on-the-job training in mental health support, conflict resolution, and improving job satisfaction are crucial for mitigating burnout and enhancing nurse well-being and patient care outcomes

159. Kalinga, N. M. (2025). Evaluation of the Expression of Programmed Cell Death-Ligand 1 (PD-L1) And Associated Factors in Patients with Osteosarcoma at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Osteosarcoma (OS) is the most common primary malignant bone tumour mostly affecting adolescents and young adults, and slightly elderly individuals. In Tanzania, OS accounts for 57.8% of primary malignant bone tumours, with a higher incidence seen among males. Use of immune checkpoint inhibitors (ICIs) including programmed death ligand-1 (PD L1) inhibitors has been found to be therapeutically valuable. However, data regarding the expression of PD-L1 among patients with OS in Tanzania is completely lacking thus hindering the application of such targeted therapies to those not responding to standard treatment. **Aims of the study:** included to evaluate the immunohistochemical expression of PD-L1 protein and its association with clinical and the pathological factors among OS patients in Tanzania. **Materials and methods:** This was a cross-sectional laboratory-based study which included retrospective data of patients with OS who were diagnosed at the Central Pathology Laboratory (CPL) of Muhimbili National Hospital (MNH) from January 2021 December to 2024. The primary antibody for assessing PD-L1

expression was 22C3, and data were analysed using STATA software version 15.0. Chi-square and Fisher's exact statistical tests were used to assess the association between the variables. A two-tailed $p<0.05$ was considered statistically significant. **Results:** A total of 75 patients were analysed in the present study. The median age of the patients was 20.0 (IQR = 16.0-32.0) years, with age ranging between 7 and 94 years. Majority 53.3% (n = 40) of the patients were females, and a great majority 70.7% (n = 53) presented with bony swellings. The most common histological subtype was fibroblastic OS which accounted for over one-third 37.3% (n = 28) of all the cases. The frequency of PD-L1 immunohistochemical expression in the current cohort was 28.6% (n = 16). PD-L1 immunohistochemical expression was statistically significantly associated to the histological subtypes of the tumours ($p = 0.009$) and the sex of the patients ($p = 0.046$). **Conclusion:** This study has shown for the first time the presence and the significant level of PD-L1 expression among patients with OS in Tanzania including its association to histological vi subtypes and the sex of the patients which may be used to predict those who may benefit from using PD-L1 inhibitors in our country. However, a larger multicentre prospective follow-up study is recommended in order to further clarify these findings and establish PD-L1 inhibitors clinical utility among patients with OS in Tanzania.

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160. Kalinga, V.M. (2025). Comparison of diagnostic performance of lung ultrasound and cxr for chest pathologies in ICU patients admitted at Muhimbili Orthopaedic Institute' Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Chest pathologies are the most common pathologies encountered in (ICU) patients where imaging studies play a key role in the diagnosis. Traditionally, lung imaging in ICU patients is performed either by bedside CXR or thoracic CT. CT scan is the gold standard in chest imaging it has some limitations including its high cost, cannot be performed on a routine basis, high radiation exposure, and the need for transportation of the critically ill patient to the radiology department. Limitations of bedside CXR include poor-quality X-ray image and low sensitivity. Lung ultrasound has revolutionized the care of patients in ICU due to its availability, portability, low cost and lack of radiation exposure**.** However, the role of lung ultrasound in diagnosis of chest pathologies in critically ill patients is not yet clearly defined. There is lack of evidence to conclude whether it can be a triage test, an add-on test or replacement test for CXR. **Objective:** To compare the diagnostic performance of lung ultrasound and CXR using chest CT scan as gold standard in the diagnosis of chest pathologies in ICU patients admitted at Muhimbili Orthopaedic institute from September 2021 to April 2022. **Methodology:** This was a hospital-based cross-sectional study that included all patients clinically presenting with chest symptoms and needed chest imaging conducted at MOI between September 2021 and April 2022. LU and CXR were performed in ICU while CT-scan was done at the Radiology Department. A structured questionnaire was used to record socio-demographic and imaging findings for various chest pathologies. Imaging interpretation of one investigation was done by two registered radiologists who were double blinded on other two imaging modalities results. Findings were recorded when two radiologists had matched interpretation or after reaching consensus. Two-way tables were created for LU and CXR findings using CT scan findings as a gold standard. Sensitivity,

specificity, negative predictive value, positive predictive values and diagnostic accuracy of both CXR and LU were performed. Data analysis was done using SPSS version 23. **Results:** Among the 54 patients involved in this study majority (63%) were males with a mean age of 48.76 years ranging from 5-86years. Most patients presented with history of difficulty in breathing 92.6%, cough 44.4% and fever 42.6%. Sensitivity, specificity and diagnostic accuracy of lung ultrasound were all 100% for pneumothorax and pleural effusion, 95%, 90% and 94 for consolidation, and 55.6%, 100% and 92.5%for interstitial lung syndrome respectively While sensitivity, specificity and diagnostic accuracy for CXR were 40%, 100% and 94% for pneumothorax, 44.4%, 100% and 81.4%for pleural effusion, 46.5%, 90.9% and 55% for consolidation and 0%, 100% and 83% for interstitial syndrome respectively. **Conclusion:** In this study, LU was found to be highly sensitive and had high diagnostic accuracy in detection of lung consolidation, pneumothorax, pleural effusion and interstitial lung syndrome compared to CXR.

161. Kallanga, D. M. (2025). Common medical emergencies and predictors of 72-hours in-hospital mortality among HIV infected adult patients presenting to the emergency department of regional hospitals in Dar-es-salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV affects 39 million people, with two-thirds from Sub-Saharan Africa with close to a million new infections every year. Over 80 million have been infected since the epidemic began. Despite efforts to improve their outcome, they present with multiple emergencies at the Emergency department (ED)Objective: To evaluate the emergency medical conditions and predictors of 72-hour hospital mortality among HIV- infected adult patients presenting to the emergency department of regional referral hospitals (RRH) in Dar-es-Salaam, Tanzania. **Methodology:** This was an observational prospective cohort design of adult HIV patients who presented to the ED of Amana, Temeke, and Mwananyamala from March to May 2024. The study participants were enrolled consecutively and consented directly or through their caretaker to those unable to. Ethical clearance was given by MUHAS IRB and Amana, Temeke and Mwananyamala hospitals gave permission to collect data. Data was collected using redcap and was exported to SPSS version 27 for analysis. Findings were summarized using descriptive statistics where by P value of less than 0.05 was considered significant. And my primary outcome was all cause of in-hospital mortality in 72-hours. **Result:** In the period of study 4412 patients attended ED, among them 548(12.4%) were HIV-positive patients. However, 271(49.5%) were enrolled in the study after meeting inclusion criteria. The median age was 41 years, mostly being females 163(61.3%), married 113(42.5%), most of them had been diagnosed with HIV 2 years prior, on ART 231(86.8%), but with poor medication adherence 167 (72.3%), non-communicable diseases (NCD) 156(58. 6%). The most common clinical presentation was tachypnea 190(71.4%), followed

by difficulty in breathing 101(38.0%) and the most common medical condition was neurological condition 68(25.6%) followed by respiratory condition 63(23.7%). Of the patients that were enrolled, just 7(2.6%) were discharged, while the majority 251(94.0%), were admitted to the ward. The mortality at 72 hours was 26 (9.6%) with 3 (1.1%) occurring at ED. Independent predictors of mortality identified to be abnormal respiratory rate (aOR=5.04, 95% CI 1.11-22.83, P value <0.036),abnormal SPO2 (aOR= 5.25, 95% CI 1.45-18.92, P value< 0.011) and NCDs aOR=3.32, 95% CI 1.11-9.87, P value<0.031)**Conclusion:** In- infected patients are presenting with different emergency conditions which require hospital admission in more than three quarter of the patients.

162. Kalongo, D. J. (2025). Developing a sustainable manufacturing model to optimize capacity utilization among Tanzanian pharmaceutical manufacturers. Muhimbili University of Health and Allied Sciences.

Abstract

Background: this study analyzed capacity utilization in Tanzania's pharmaceutical manufacturing sector, revealing that local firms operate below 60% of potential compared to the global average of 70–85%. low utilization leads to inefficiencies, high production costs, and limited medicine availability. the study identified key factors affecting performance and proposed a sustainable model to enhance efficiency and strengthen local production capacity. **research objective:** the study examined trends, underlying factors, effects, and strategic interventions related to production capacity utilization in Tanzania's pharmaceutical manufacturing sector. based on the findings, a context-specific pharmaceutical manufacturing model was developed to enhance effective utilization of production resources and support sustainable local medicine production. **methodology: a** mixed-methods, human-centered design was employed across five pharmaceutical manufacturing facilities. qualitative data were collected through in-depth interviews with key stakeholders, and quantitative data through structured checklists on five-year production trends (2020–2024). thematic analysis was applied to qualitative data, while quantitative data were analyzed descriptively using microsoft excel. a causal loop diagram (cld) was developed to model system interactions affecting capacity utilization. **research findings:** capacity utilization in Tanzanian pharmaceutical manufacturing remains below 60%, hindered by high input costs, limited raw materials, outdated technology, unreliable utilities, and skill gaps. supporting factors include tax incentives, gmp compliance, and institutional procurement. the proposed cld model highlights workforce development, technological advancement, and regulatory synergy as key drivers of sustainable utilization **conclusion**: improving capacity utilization is essential for the sustainability and competitiveness of Tanzania's pharmaceutical manufacturing sector. this requires investment in skilled workforce development, modernization of production systems, supply chain integration, regulatory streamlining, and supportive fiscal and industrial policies. a systems-based approach will enable manufacturers to scale efficiently, reduce costs, and meet both domestic and regional market demands. ***Kkey terms:*** *capacity utilization, pharmaceutical production potentials, causal loop diagramming (cld), and pharmaceutical capacity utilization model.*

163. Kamani, Z.J. (2025). Evaluating Trends, Challenges, And Opportunities of Biosimilar Regulatory Approval in Tanzania 2020-2024. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Biosimilars are biological products developed to closely resemble existing biologic drugs, offering cost-effective alternatives to expensive originator biologics, especially for treating chronic diseases like cancer and diabetes. Global regulatory bodies like the European Medicines Agency (EMA) and the World Health Organization (WHO) provide comprehensive guidelines for biosimilar approval. Low- and middle-income countries (LMICs) like Tanzania experience challenges such as limited regulatory expertise, resource constraints, and a lack of harmonized standards. Nevertheless, there is limited data on the trends and challenges regarding regulatory approvals, especially from sub-Saharan Africa. **Objective: T**o evaluate Trends, Challenges, and Opportunities of Biosimilar Regulatory Approval in Tanzania 2020-2024. **Methodology:** A cross-sectional study employing a mixed-methods approach was used. Quantitative data were collected from biosimilar dossiers submitted through the TMDA's Regulatory Information Management System (RIMS) from 2020 to 2024, while qualitative insights were obtained through interviews with TMDA staff and external regulatory experts. Data analysis combined descriptive statistics for quantitative findings and thematic analysis for qualitative data, aiming to uncover trends, classes, approval rates, and challenges in the regulatory process. **Results:** A total of 22 biosimilars applied for registration in Tanzania between 2020 and 2024, with the majority submitted in 2022 (11; 50.0%). Of these, only 10 (45.4%) were approved, and just 2 (20.0%) were ultimately imported. Recombinant proteins were the predominant class, accounting for most approvals and imports, with human insulin comprising 4,000 (97.6%) of all imported units. Qualitative findings revealed systemic challenges in the biosimilar regulatory process, including incomplete application dossiers, limited assessor specialization, inconsistent training, and a lack of product-specific guidelines. However, participants also identified key opportunities for improvement, such as digitalization, reliance on international regulatory collaborations, and stakeholder engagement mechanisms **Conclusion:** These findings highlight the need for targeted regulatory reforms in Tanzania, including the development of biosimilar-specific guidelines, improved assessor training, stricter dossier submission protocols, and enhanced use of international collaboration mechanisms to ensure timely approval and access to high-priority biosimilar medicines.

164. Kambanda, A. B. (2025). Evaluation of gallium-68 fibroblast activation protein inhibitors -positron emission tomographic–computed tomography in detecting minimal residual disease and subclinical metastatic sites in post-treatment breast cancer. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Breast cancer has become the most common type of cancer, surpassing lung cancer, and is the leading cause of cancer-related deaths among women worldwide. Various breast imaging techniques work together to aid in diagnosis and treatment. One promising method is Ga-68 FAPI PET-CT. The novel radiotracer Ga-68 FAPI PET-CT has shown high tumour-to-

background contrast and potential superiority over conventional imaging (CT/MRI). **Objective|:** The primary purpose was to evaluate the sensitivity and specificity of Ga-68 FAPI PET/CT in detecting minimal residual disease and subclinical metastatic sites in breast cancer patients after completion of initial treatment at Ocean Road Cancer Institute between July 2024 and December 2024 **Methodology**: This study was a retrospective hospital-based cross-sectional analysis conducted at the Nuclear Medicine Department of Ocean Road Cancer Institute in Dar Es Salaam, Tanzania. It involved 45 post-treatment breast cancer patients who underwent Ga-68 FAPI PET-CT between July and December 2024. Conventional CT/MRI results were reviewed for comparison. Data were extracted from PACS and patient files. The maximum standardized uptake values (SUVmax) were measured for relevant regions of interest. Analysis was performed using SPSS v24; sensitivity, specificity, McNemar's test, Fisher's exact test, and log-rank analysis were applied. **Results:** The mean patient age was 58.8 ± 13.7 years; most were postmenopausal (71.1%). Ga-68 FAPI PET-CT demonstrated 100% sensitivity and 82.5% specificity for detecting MRD. It identified subclinical metastases in 26.7% of patients compared with 11.1% on conventional imaging ($p = 0.016$). Recurrence occurred in all patients with PET-detected residual disease versus 9.1% of those without ($p < 0.001$). Mean recurrence-free survival was 12.4 months in patients with residual disease versus 58.6 months without ($p < 0.001$). **Conclusion:** xii Ga-68 FAPI PET-CT is highly sensitive and specific for detecting residual and subclinical metastatic breast cancer, outperforming conventional imaging. It shows strong correlation with recurrence-free survival and offers potential value in post-treatment monitoring and recurrence risk stratification. Keywords: Ga-68 FAPI, PET-CT, breast cancer, residual disease, subclinical metastasis, recurrence-free survival.

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165. Kameza, E. (2025). Prevalence and factors associated with suicidality among persons with psychiatric disorders attending the psychiatric outpatient clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Science.

Abstract

Background: Suicide is a considerable health problem globally. Among patients with mental illnesses, suicidality is more prevalent than in the general population. Previous studies confirm that mental disorders increase the risk of suicidality. At least 90% of all deaths due to suicide occur in people who have been diagnosed with psychiatric disorders. The quality of data on suicidality is poor. There is a need to establish suicidality risk factors and causes for designing preventive interventions. Therefore, the findings of this study could contribute to giving insight into the current prevalence of suicidality among patients attending the psychiatric outpatient clinic at Muhimbili National Hospital (MNH) for early intervention. **Objective:** This study aims to determine the prevalence and factors associated with suicidality among persons with psychiatric disorders who attend the psychiatric outpatient clinic at MNH. **Materials and Method:** This study used a hospital-based cross-sectional design with quantitative data. The population of the study was all patients with psychiatric disorders attending the psychiatric outpatient clinic at MNH in Dar Es Salaam, Tanzania. The total sample size was 349 participants, calculated using a single proportion population formula, an equation from Cochran's formula, calculated using the consecutive sampling technique. The data were collected using a face-to-face interview

questionnaire. The primary study outcome, suicidality, was assessed with the WHO STEPS survey instrument, a tool validated by the World Health Organization (WHO) for surveillance of non-communicable diseases (NCDs). The data on social support were collected using the Oslo Social Support Scale-3 tool (OSSS-3). All tools used to collect data were incorporated into the Kobo-collect toolbox, and data were analyzed using SPSS version 27. The analysis of socio-demographic and clinical characteristics was done using descriptive statistics to determine frequency, proportion, and mean (SD). The association between the primary outcome and other factors was found using bivariate analysis in which variables with p-value less than 0.2, with Crude Odds Ratio (COR) calculated, were considered to be analyzed in multivariable logistic regression analysis in which statistically significant associated variables were those with a p-value lower than 0.05 with Adjusted odds Ratio (AOR) and 95% Confidence Interval (CI). **Results:** A total of 349 participants were enrolled in this study, of whom 184 (52.72%) were females. The participants' mean age (SD) was 38.86 (±13.17) years, ranging from 18 to 86 years. The overall 12-month prevalence of suicidality among persons with psychiatric disorders who attend the Psychiatric Outpatient Clinic at MNH was 22%. Specifically, suicidal thoughts were reported by 20.92% of participants, suicidal plans by 9.17%, and suicide attempts by 6.30% within the past 12 months. Additionally, 19.49% of participants reported a lifetime suicide attempt. Factors significantly associated with suicidality included the duration of mental illness ≤2 years (AOR = 3.13, 95% CI: 1.093–8.981, p = 0.034), the history of a lifetime suicide attempt (AOR = 3.80, 95% CI: 1.975–7.326, p < 0.001), and an informal education (AOR = 1.74, 95% CI: 1.446–6.806, p = 0.017) **Conclusion:** In this study, one in five persons with mental illness reported suicidality within the past 12 months. The odds of suicidality among participants were higher among those diagnosed with mental illness within the first two years since known diagnosis, participants with an informal education, and those with a history of previous suicide attempts before the 12 months before this study. **Recommendations:** Implement systematic screening for suicidality in all persons diagnosed with mental disorders attending the clinic, especially among those within two years of receiving a diagnosis of mental illness, with no formal education, and a history of a previous suicide attempt. Organize community-based group education sessions to raise awareness about the link between psychiatric disorders and suicidality. Conduct more research to generate comprehensive data on suicidality in both the general population and individuals with mental illnesses.

166. Kanyeka, M. (2025). Factors Associated with Uptake of HIV Self-testing Among Adolescents Girls and Young Women in Kinondoni Municipal Council, Dar es Salaam. Muhimbili University of Health and allied sciences.

Abstract

Background: HIV self-testing (HIVST) is a crucial strategy in enhancing early diagnosis and linkage to care, particularly among Adolescent Girls and Young Women (AGYW), who remain disproportionately affected by HIV. Despite its proven benefits, uptake of HIVST among AGYW in Tanzania remains inconsistent due to a range of individual, social and systemic factors. **Objective:** This study aimed to assess the factors associated with the uptake of HIV self-testing among adolescent girls and young women in Kinondoni Municipal Council, Dar es Salaam.

Methodology: An analytical cross-sectional study was conducted among AGYW aged 15 to 24 years in Kinondoni Municipal Council, Dar es Salaam. Data were collected through structured questionnaires administered to participants, capturing information on socio demographic characteristics, need based factors and enabling factors to HIVST. Analysis was performed using SPSS version 27. Descriptive statistics summarized the sample characteristics, while logistic regression analysis was used to identify factors associated with HIVST uptake. Variables with a p-value **Findings:** Majority the participants, 74.2% reported having used HIVST in the past 12 months. In dividual factors significantly associated with HIVST uptake included age, religious affiliation and level of knowledge about HIVST. Among need-based factors, perceived risk of HIV infection, motivations for testing (personal curiosity, health concerns and provider influence) and confidence in using HIVST kits showed significant associations. Enabling factors such as exposure to HIVST campaigns, peer influence, comfort in using HIVST kits, and family or friend support also significantly predicted HIVST uptake. **Conclusion:** The study highlights a relatively high uptake of HIVST among AGYW in Kinondoni Municipal Council. Multiple individuals, need-based and enabling factors were found to influence this behavior. Notably, knowledge, perceived risk, confidence and supportive environments played central roles.

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167. Karaba, J. (2025). "Prevalence and associated factors of hepatorenal syndrome among adults with decompensated advanced chronic liver disease admitted at Muhimbili national hospital, dares salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hepatorenal syndrome (HRS) is a serious and potentially fatal complication of decompensated advanced chronic liver disease (dACLD). While its prevalence and associated factors are well described in other regions, data from sub-Saharan Africa, including Tanzania, remain scarce. Understanding the magnitude and associated factors of HRS locally is essential to improve outcomes. **Objective:** To determine the prevalence and associated factors of HRS among adults with dACLD admitted at Muhimbili National Hospital (MNH), Dar es salaam, Tanzania. **Methods:** This was a hospital-based prospective observational study with cross-sectional analysis carried out from August 2024 to January 2025 at MNH, involving 100 adults with dACLD. Data were collected through structured questionnaires, clinical assessments and laboratory investigations. HRS was defined using the International Ascites Club (IAC) criteria (2015/2021). Statistical analysis included robust Poisson regression to estimate adjusted prevalence ratio (aPR) with 95% confidence intervals. **Results:** The prevalence of HRS was 11% (95% CI: 5.0-18.0). Hyponatremia (aPR=3.95, 95% CI: 1.36-11.51; p=0.012) and hypoalbuminemia (aPR=4.94, 95% CI: 1.20-20.28; p=0.027) were independently associated with HRS. Other factors such as upper gastrointestinal bleeding and high MELD score showed positive trends but were not statistically significant. **Conclusion:** HRS affects about one in ten patients with dACLD at MNH. Hyponatremia and hypoalbuminemia are key predictors, underscoring the importance of routine monitoring of sodium and albumin for early identification of high-risk patients. These findings

provide critical local evidence to guide clinical care and inform hospital resource allocation in Tanzania.

168. Karume, M. M. (2025). Prevalence of urogenital schistosomiasis and associated factors among pregnant women attending antenatal care clinics in selected health facilities of Ruangwa district, southeast Tanzania. Muhimbili University of Health and Allied Sciences

Abstract

Background: The prevention of urogenital schistosomiasis (UGS) in endemic places has primarily concentrated on delivering praziquantel as preventive chemotherapy for school-aged children, sometimes overlooking other at-risk groups such as women of reproductive age, including pregnant women. However, women in this group are equally susceptible and may acquire urogenital schistosomiasis, which can proceed to female genital schistosomiasis (FGS). FGS is linked to major reproductive health implications, including an increased chance of contracting HIV and other sexually transmitted infections (STIs), as well as negative pregnancy outcomes include infertility, ectopic pregnancy, and poor birth outcomes. Despite these implications, the prevalence and risk factors for urogenital schistosomiasis among pregnant women in the endemic Ruangwa District, Lindi Region which is little studied. **Broad Objective**: The purpose of this study was to assess the prevalence and intensity of urogenital schistosomiasis, as well as the associated variables, among pregnant women attending prenatal care clinics in selected health facilities in Ruangwa District, Lind region Tanzania. **Materials and Methods:** The analytical cross-sectional study conducted using quantitative approached was conducted among 359 pregnant women selected through simple random sampling from four wards in Ruangwa District, an area endemic for urogenital schistosomiasis. Data were collected using a structured interviewer-administered questionnaire that captured sociodemographic characteristics, knowledge, attitudes, and risky practices related to schistosomiasis. Urine samples were examined for macrohematuria and S. haematobium eggs using the standard urine filtration technique. Data were summarized using descriptive statistics, and associations between categorical variables were assessed using the Fisher's Exact Test. Variables with $p < 0.2$ were included in a multivariate logistic regression model to calculate crude odds ratios (cORs) with 95% confidence intervals (CIs). Adjusted odds ratios (aORs) with 95% CIs were computed to control for confounders, and statistical significance was set at $p < 0.05$. **Results:** The total frequency of S. haematobium infection, macrohematuria, and microhematuria among pregnant women was 7.2%, 3.6%, and 4.5%, respectively, with the majority of infections being mild (84.6%). Using untreated water for irrigation and regular contact with water during farming activities were significantly associated with urogenital schistosomiasis ($p < 0.001$). Despite a reasonably high awareness of schistosomiasis (58.5%), knowledge gaps persisted, notably among younger and less educated women. Attitudes toward the disease were not

significantly related to infection status. **Conclusion and Recommendations:** This study suggests that behavioral and structural variables, particularly frequent contact with untreated water during irrigation or farming, are major causes of urogenital schistosomiasis in pregnant women in this scenario. Given that urogenital schistosomiasis can progress to female genital schistosomiasis, which has been related to an increased vulnerability to HIV, other STIs, and poor pregnancy outcomes, it is critical to incorporate routine schistosomiasis screening and treatment into antenatal care services. Furthermore, behavioral change communication strategies should go beyond raising awareness to address the underlying structural and cultural barriers that contribute to infection transmission.

169. Kasese, J.J. (2025). Predictors of anemia among pregnant women attending antenatal clinics in Misungwi district council, Mwanza Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Anemia is a major public health concern for pregnant women, affecting maternal and fetal health. In Tanzania, 55.7% of pregnant women have anemia, with Mwanza Region at 39.0%. Misungwi District in Mwanza faces an even higher prevalence of 39.7%, despite national supplementation programs and access to diverse, nutrient-rich foods. Limited evidence exists on the local causes, feeding practices, and behaviors contributing to this high burden in Misungwi and similar areas. **Objective:** This study aimed to assess predictors of anemia among pregnant women attending antenatal clinics in Misungwi district, Mwanza, Tanzania. **Methodology:** A cross-sectional study was conducted in 10 randomly selected health facilities in Misungwi district with 616 pregnant women to assess anemia status. Data on anemia and dietary factors were collected through structured questionnaires, medical records, and standardized tools like WDDS, FFQ, and HFIAS. Analysis using Stata 15 included descriptive statistics for participant characteristics and anemia prevalence, and multiple logistic regression to identify anemia predictors, presenting results as adjusted odds ratios and 95% confidence intervals. **Results**: The anemia prevalence among pregnant women in Misungwi district was 33%. Women aged 26-36 (AOR=1.17, 95% CI: 1.23–1.48) and above 36 years (AOR=1.29, 95% CI: 1.14–1.26) had higher anemia risk compared to those aged 15-25. Divorced (AOR=1.04, 95% CI: 1.10–1.28), single (AOR=1.13, 95% CI: 1.06–1.17), and widowed women (AOR=1.27, 95% CI: 1.17–1.28) were more likely to be anemic than married women. Women with primary (AOR=1.26, 95% CI: 1.14–1.34) and post-primary education (AOR=1.13, 95% CI: 1.12–1.15) had higher anemia risk than those with higher education. Severe household food insecurity (AOR=1.15, 95% CI: 1.10–1.14) and being in the lowest (AOR=1.06, 95% CI: 1.05–1.13) or second wealth quintile (AOR=1.16, 95% CI: 1.14–1.18) increased anemia risk. Nutritional counseling shows a significant association (AOR=0.57, 95% CI: 0.01–0.27). Adherence to iron supplementation (AOR=0.02, 95% CI: 0.01–0.37), anti-malaria tablets (AOR=0.01, 95% CI: 0.03–0.17), deworming tablets (AOR=0.01, 95%CI: 0.13–0.15), and antiretroviral therapy (AOR=0.03, 95% CI: 0.01–0.32) were protective against anemia. **Conclusion and recommendations**: Anemia affected 33% of pregnant women in Misungwi district attending antenatal clinics. Although services like iron and folic acid supplements, anti-malaria, and deworming tablets are available, their use and adherence are low but linked to reduced

anemia. Nutritional counseling alone did not significantly reduce anemia, indicating issues with service quality. To address anemia, interventions should focus on pregnant women with low education, poverty, and household food insecurity.

170. Kassamali, M.H. (2025). Evaluation of dose adjustment practice in hospitalized patients with renal impairment in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Reduced drug clearance in patients with renal impairment results in drug accumulation, which can lead to drug toxicity and adverse drug events. These events contribute to a higher morbidity and mortality, increased hospital stay, poor adherence to treatment and increased healthcare costs. For this reason, appropriate drug dose adjustment for certain drugs is of utmost importance in patients with reduced renal function to avoid suboptimal therapeutic outcomes, toxicity and adverse drug events. However, information regarding renal dose adjustment practice is limited in low and middle income countries (LMICs).**Objective:** This study aimed to assess dose adjustment practice among hospitalized patients with renal impairment in Dar es Salaam, Tanzania.**Methodology:** A cross-sectional study was conducted between February and May 2025 among hospitalized patients with renal impairment at three regional referral hospitals in Dar es Salaam, Tanzania. Cockcroft-Gault equation was employed to calculate the creatinine clearance (CrCl) using the patient's serum creatinine. The appropriateness of drug dosing was determined by comparing the prescribed doses with the guidelines obtained from the up to date application. Data were analyzed using the R software version 4.5. The Chi-Square test was used to determine the relationship between appropriate drug dosing and the patient's socio-demographic and clinical characteristics. Predictors of dose adjustment were assessed using both univariate and multivariate modified Poisson regression analyses.**Results:** The final analysis included 191 patients, with males comprising 56.0% of the study population. The median age was 49.0 years (IQR: 38.0–61.0). The median serum creatinine was 14.9 mg/dL (IQR: 8.9-22.4) and the median GFR was 5.0 mL/min (IQR: 3.0-8.0). The final analysis included 1415 medications of which 312 (22%) required dose adjustment. Out of the 312 medications that needed dose adjustment, 127 (57.5%) were not adjusted at all, 94 (42.5%) were inappropriately adjusted, and 91 (29.2%) were appropriately dose adjusted. In this study, out of a total of 191 patients, 141 (73.8%) received at least one medication at an incorrect dose. Hydralazine was the most frequently prescribed medications requiring dose adjustment with 66% of its prescriptions inappropriately dosed. This study found no significant factors that were associated with appropriate dose adjustments. **Conclusion:** The study revealed that, only 29% of the prescribed medications were appropriately dose adjusted. Hydralazine and paracetamol were the most frequently prescribed drugs that required dose adjustment. No significant factors were identified as predictors of appropriate medication dose adjustments in this study.

171. Kassembo, P. (2025). Hypertension control status and its associated factors among patients with chronic kidney disease undergoing dialysis at regional referral hospitals in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hypertension is more prevalent in patients with chronic kidney disease and the two pathological conditions frequently coexist in a reciprocal relationship. Poor hypertension control has been the biggest problem in patients with chronic kidney disease as a result of different factors in low- and middle-income countries, including Tanzania.**Aim:** This study aimed to determine hypertension control status and its associated factors among patients with chronic kidney disease undergoing dialysis at Amana and Temeke Regional Referral Hospitals in Dar es Salaam, Tanzania. **Materials and methods:** A hospital-based cross-sectional analytical study was conducted among CKD patients with hypertension attending dialysis units at the two hospitals. A consecutive sampling technique was used to enroll 177 participants. Data were collected using a pretested interviewer-administered questionnaire, adapted from validated scales (H-SCALE and HK-LS), and analyzed using STATA version 15.1. Descriptive statistics were used to summarize socio-demographic characteristics, while a chi-square test was used to compare differences between groups. Univariate and multivariable robust Poisson regression analyses were conducted to examine the associations between socio-demographic, treatment, and knowledge factors and the outcome variable. **Findings:** The overall proportion of patients with controlled hypertension was 10.7%, with 4.0% at Amana and 6.7% at Temeke Regional Referral Hospitals. Univariable and multivariable analyses identified two independent predictors of hypertension control: having a salary as the primary source of income (aPR = 3.87; 95% CI: 1.70–8.84; p = 0.001) and high knowledge of hypertension (aPR = 3.25; 95% CI: 1.38–7.65; p < 0.0001). **Conclusion:** The control of hypertension among chronic kidney disease patients on dialysis in these urban referral hospitals is significantly low. Socioeconomic status and patients' knowledge were the main factors influencing blood pressure control. Interventions that promote health education and provide socioeconomic support are needed to improve hypertension outcomes in dialysis patients.

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172. Kato, A. (2025). Process evaluation of the implementation of cervical cancer screening guideline for women living with HIV attending care and treatment clinic at Mwananyamala Regional Referral Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer remains a leading cause of cancer-related morbidity and mortality among women, particularly in low-resource settings. Women living with HIV (WLWHIV) are at increased risk due to immunosuppression. Early screening and timely intervention are vital to prevent the cervical cancer burden in this population. **Objective:** To evaluate the implementation of the cervical cancer screening guideline for WLWHIV attending the care and treatment clinic at Mwananyamala Regional Referral Hospital. **Materials and Methods:** This cross-sectional study employed a mixed-methods design combining quantitative and qualitative data. Quantitative data were retrospectively extracted from medical records of WLWHIV attending the clinic between November 2023 and February 2025. For the qualitative component, purposive sampling selected 10 healthcare providers (7 nurses and 3 doctors) involved in cervical cancer screening. In depth interviews explored experiences with guideline implementation. Quantitative data were analysed

using STATA version 18, while qualitative data underwent thematic analysis to identify barriers, facilitators, and operational factors affecting implementation. **Results:** A total of 2,764 WLWHIV were included, with a mean age of 42.2 years (SD=8.1) and mean ART duration of 9.5 years (SD=4.4). Screening coverage was high (99.9%), predominantly using visual inspection with acetic acid (VIA). About 86.5% were screened according to national guidelines. However, 13.2% of women eligible for HPV DNA testing were screened using VIA, and despite women's eligibility, no Pap smear tests were performed. Healthcare providers were aware of the guidelines and valued their integration within HIV care but reported challenges such as staff shortages, multitasking, limited training, and occasional inconsistencies in guideline interpretation. Operational constraints included shortages of supplies, inadequate infrastructure, and inefficiencies in referral and record-keeping systems. Key facilitators were teamwork, stakeholder support, and high client demand. **Conclusion:** Cervical cancer screening coverage among WLWHIV at Mwananyamala Regional Referral Hospital is high, reflecting successful integration within HIV services. Nonetheless, gaps in guideline adherence, particularly the underuse of HPV DNA testing and absence of Pap smear services, highlight resource and operational challenges. Sustained provider commitment, stakeholder support, and improved infrastructure are essential to enhance service quality and follow-up.

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173. Kavishe, I. (2025). Healthcare Provider Perspectives on Timely Childhood Tuberculosis Diagnosis in Songwe, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Tuberculosis (TB) remains a major public health challenge despite being preventable and treatable. In 2022, >7.5 million new cases were reported globally, with children aged 0–14 years comprising ~12%. Diagnosing childhood TB is difficult due to non-specific clinical presentations and limited diagnostics in low-resource settings such as Tanzania, resulting in delays, morbidity, mortality, and continued transmission. **Objective:** To explore healthcare providers' experiences and perceptions of the timeliness of childhood TB diagnosis and to identify feasible, context-specific strategies to improve early detection in Songwe Region, Tanzania. **Methods:** We conducted a phenomenological qualitative study using in-depth interviews with purposively selected providers involved in childhood TB diagnosis and management across primary and secondary facilities in Songwe. Interviews were audio-recorded, transcribed verbatim, and analyzed via deductive thematic analysis; coding and data management were conducted in Dedoose. **Findings:** Providers reported clinical challenges arising from non-specific symptomatology and difficulty obtaining high-quality sputum from children, leading to delayed or missed diagnoses. System-level barriers included staff shortages, high patient volumes, limited access to GeneXpert, and weak specimen referral systems. Community level constraints low caregiver awareness, stigma, and economic barriers further impeded timely care-seeking. Reported pragmatic adaptations included reliance on clinical judgement when laboratory confirmation was not immediately available, adoption of stool based GeneXpert as an alternative diagnostic

approach, peer consultations for complex cases, and engagement of community health workers to improve awareness and accelerate referral. **Conclusion:** Delayed childhood TB diagnosis in Songwe reflects intersecting clinical, system, and community barriers. While providers adapt effectively, sustainable improvement requires strengthening child-friendly diagnostics (including scale-up of stool-based Expert), workforce capacity and mentorship, specimen referral networks, and targeted community education. Prioritizing these near-term investments is likely to accelerate earlier detection in resource-limited settings.

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174. Kelvin, J.M. (2025). Histological Profile of Major Salivary Gland Neoplasms and the Diagnostic Accuracy of Fine Needle Aspiration Cytology at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Parotid glands, submandibular, and sublingual are important exocrine glands in the human body that are vital to the operation of the aerodigestive tract. Significant salivary gland neoplasms, which make up only 1% to 5% of head and neck neoplasm cases, can exhibit a variety of histological characteristics despite being mainly benign. Between 21-46% of salivary gland neoplasms are malignant neoplasms. Fine needle aspiration cytology (FNAC) is universally accepted as the preoperative assessment tool for major salivary gland neoplasms. Still, its usefulness has been in question due to low and variable sensitivity and specificity. In 2015 due to inconsistency in reporting FNAC among Pathologists worldwide, the Milan System for Reporting Salivary Gland Cytopathology (MSRSGC) was established. In Tanzania, published data on the diagnostic accuracy of FNAC for major salivary gland neoplasms are limited. This creates uncertainty in clinical decision making and highlights the need for local data to validate the reliability of FNAC in this setting. **Objective:** This study aimed to determine the histological profile of major salivary gland neoplasms and the diagnostic accuracy of FNAC at Muhimbili National Hospital. **Methodology:** This was a retrospective, hospital-based cross-sectional study conducted at Muhimbili National Hospital central pathology laboratory, between October 2024 and March 2025. Data were extracted from patient records of individuals diagnosed with major salivary gland neoplasms who had undergone both FNAC and histological examination between January 2019 and December 2023. A total sample size of 162 was determined using a sensitivity estimate from previous studies. Non-probability convenience sampling was applied, with only pathologist-verified FNAC and histology reports included. Data were collected using a structured extraction form and analysed with the Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics were used to summarize demographic and histological profiles, while chi-square tests assessed associations between variables. Sensitivity, specificity, and diagnostic accuracy of FNAC were calculated against histology as the gold standard. **Results:** A total of 162 samples were retrieved, with participants ranging in age from 3 months to 93 years (mean 44 ± 21 years). The majority were aged 41–60 years (37%), and females (53.1%) slightly outnumbered males (46.9%), giving a male-to-female ratio of 1:0.88. Overall, benign neoplasms accounted for 86 cases (53.1%), while malignant neoplasms constituted 76 cases (46.9%). Major salivary gland neoplasms affected mostly participants aged 41-60 years accounted for 64(39.5%) cases, the trend of malignancy was increasing with age, age group of 61-80 years 57.6% (19 cases) were malignant

and 81-100 years all 3 cases (100%) were diagnosed with malignant neoplasms of major salivary gland. Pleomorphic adenoma was the most common benign type, comprising 61 cases (70.6% of benign neoplasms), whereas mucoepidermoid carcinoma was the most common malignant subtype, accounting for 18 cases (23.7% of malignant neoplasms). FNAC showed a sensitivity of 88.4% and specificity of 40.8% for benign neoplasms, with diagnostic accuracy of 66.1%. For malignant neoplasms, FNAC sensitivity was 40.8% and specificity 88.4%, with diagnostic accuracy of 66.1%. **Conclusion and Recommendations:** Salivary gland neoplasms are rare and mainly affect the major glands, especially the parotid. They are more common in middle-aged adults and females, with benign neoplasms predominating. Pleomorphic adenoma is the most common benign type, while mucoepidermoid carcinoma is the most common malignant type. Malignancy risk increases with age. FNAC shows high sensitivity but low specificity for benign neoplasms, and low sensitivity but high specificity for malignant ones, indicating that FNAC results should be interpreted cautiously. Due to the limited sensitivity of FNAC for malignant salivary gland neoplasms, it is recommended to confirm FNAC results with histology. Future research should include larger, multicenter studies involving diverse populations to better capture regional differences.

175. Khamis, K, S. (2025). Assessing the annual prevalence of traumatic brain injury and related complications at Muhimbili Orthopaedic Institute: A retrospective review of 2024. Muhimbili university of health and Allied Sciences.

Abstract

Background: Road traffic accidents (RTAs) constitute a major public health challenge, often resulting in significant morbidity and mortality. Identifying factors that predispose victims to poor management outcomes is essential for optimizing trauma care pathways. This study aimed to determine independent predictors of unfavorable outcomes among RTA patients treated at Muhimbili Orthopedic Institute (MOI) in 2024. **Methods:** A cross-sectional analysis was conducted on 173 consecutive RTA victims admitted to MOI. Patient demographics, injury characteristics, time to presentation, physiological status at emergency department (ED) arrival, Glasgow Coma Scale (GCS) on admission, treatment modality, and length of hospital stay were recorded. Outcomes were categorized as favorable or unfavorable based on predefined clinical criteria. Multivariable logistic regression yielded adjusted odds ratios (AORs) with 95% confidence intervals (CIs) and p-values to identify independent predictors.: **Results:** The prevalence of Traumatic Brain injury was 19% (95%CI; 14.0 – 26.4). Injuries to the head (AOR = 16.61, 95% CI [3.85, 71.71], $p < .01$) and trunk (AOR = 7.72, 95% CI [1.29, 46.13], $p = .03$) were strongly associated with unfavorable outcomes compared to extremity injuries. Presentation delays exceeding one hour increased the odds of a poor outcome more than threefold (AOR = 3.30, 95% CI [1.13, 9.60], $p = .03$). Patients arriving in an unstable condition faced nearly eight times higher risk (AOR = 7.78, 95% CI [2.33, 26.06], $p < .001$). Severe neurologic compromise (GCS ≤ 8) conferred the greatest risk (AOR = 20.12, 95% CI [7.23, 55.96], $p < .001$). An unexpected finding was that a hospital stay of 14 days or less was paradoxically linked to poorer outcomes (AOR = 6.85, 95% CI [5.81, 8.06], $p < .001$). **Conclusion:** Anatomical site of injury, delayed presentation, hemodynamic instability, and severe neurologic impairment critically drive

unfavorable RTA outcomes. Surgical management and low-energy mechanisms such as falls improve prognosis. These findings highlight the need for streamlined triage protocols emphasizing rapid head and trunk injury assessment, expedited operative pathways, and reassessment of discharge timing to enhance recovery trajectories in trauma care. ***Keywords:*** *Prevalence, traumatic brain injury, and complications.*

176. Khamis, K.M. (2025). Associated risks for potential stroke among hypertensive patients using Framingham stroke risk profile at a single point in time at Jakaya Kikwete Cardiac Institute, Tanzania. Muhimbili University of Health and allied sciences.

Abstract

Background: Stroke admissions in Tanzania are rising, averaging 2,953 cases annually at Muhimbili National Hospital, with many survivors facing long-term disability. Early identification of individuals at high risk is crucial for implementing effective primary prevention using validated clinical tools. **Objective:** To assess factors associated with potential stroke risk among hypertensive patients at Jakaya Kikwete Cardiac Institute (JKCI) using the Framingham Stroke Risk Profile (FSRP). **Methods:** In this analytical cross-sectional study, 185 patients with blood pressure ≥140/90 mmHg were randomly selected at JKCI. Participants completed a intervieweradministered FSRP questionnaire; clinical measurements and medical record reviews captured blood lipids, comorbidities, and lifestyle factors. Data were analyzed in SPSS version 23 using descriptive statistics, bivariates and multivariable logistic regression to identify independent risk factors. **Results:** In this study,participants were 54.1% male; 50.3% were aged 40–59 years. According to FSRP, the overall prevalence of potential-stroke-risk was 127 (68.6% (95%CI: 56.0 - 82.3) for both males and females. Based on risk level 31.4% had low, 50.8% intermediate, and 17.8% high 10-year stroke risk. Elevated low-density lipoprotein (LDL) increased stroke risk six-fold (AOR 6.16; 95% CI 2.79–13.59; p 0.001). Physically active patients and those reporting 150 minutes of vigorous activity weekly had 68% lower odds of potential stroke risk (AOR= 0.32, 95%CI: 0.13-0.78, p-value 0.012) and 61% lower crude odds of potential stroke risk (COR): 0.39 (95% CI 0.19–0.85), p=0.018 respectivley. Additional non-FSRP factors were unhealthy dietary habits, psychosocial stressors, and family history of stroke which in this study modulated traditional risk factors such as hypertension, diabetes, and atrial fibrillation. Conclusion: Over half of hypertensive patients at JKCI exhibit elevated stroke risk. Targeted interventions addressing modifiable factors particularly LDL reduction and promoting physical activity are urgently needed.

177. Khatry, N. S. (2025). Adherence to antihypertensive medication, its determinants, and blood pressure control among insured and non-insured hypertensive patients at Jakaya Kikwete Cardiac Institute. Muhimbili university of health and Allied Science.

Abstract

Background: Hypertension affects 1.28 billion adults worldwide, two-thirds living in low- and middle-income countries. Despite effective therapies, blood pressure control remains poor, thus affecting the WHO's goal of achieving a 33% reduction of hypertension prevalence globally by

2030. In Tanzania, financial barriers and inconsistent medication access persist, and little is known about how adherence to antihypertensive medication differs between insured and non-insured patients. **Aim of Study:** To determine adherence to antihypertensive medication, its determinants, and blood pressure (BP) control among insured and non-insured hypertensive patients attending Jakaya Kikwete Cardiac Institute (JKCI). Methodology: A hospital-based cross-sectional study was conducted over four months at JKCI, the national referral center for cardiovascular care in Tanzania. Hypertensive patients aged 18 years and above were consecutively enrolled and categorized by insurance status. Demographic and clinical data were collected through structured questionnaires and electronic medical records. Adherence to antihypertensive medication was assessed using the validated Morisky Medication Adherence Scale (MMAS-8), while blood pressure control was defined as <140/90 mmHg at clinic measurement. Data were analyzed using SPSS version 27. Chi-square or Fisher's exact tests were applied to determine associations, and binary logistic regression was performed to adjust for potential confounders including age, sex, education level, and insurance status. Ethical approval was obtained from the Muhimbili University of Health and Allied Sciences's Institutional Review Board, and patient confidentiality was strictly maintained. Results: A total of 538 hypertensive patients were recruited, with a median age of 59 years (IQR 50–67), and 63.0% were male. Most participants had at least secondary education, and 65.6% belonged to the low socio-economic group. The median systolic and diastolic blood pressures at recruitment were 145 mmHg and 90 mmHg, respectively. Based on MMAS-8 scores, 299 patients (55.6%) demonstrated high adherence to antihypertensive medication. Adherence was significantly higher among insured compared to non-insured patients (71.7% vs 39.4%, p<0.001). Education level was also significantly associated with adherence (p=0.019), whereas age, sex, employment status, and income were not. Overall, 308 patients (57.2%) achieved the target BP (<140/90 mmHg), with no significant difference between insured and non-insured groups (p=0.486. **Conclusion:** Health insurance significantly improves medication adherence but does not independently predict BP control, highlighting the multifactorial nature of hypertension management. To achieve meaningful BP reduction, insurance expansion should be complemented by guideline-based treatment intensification, consistent drug supply, and patient-centred adherence interventions.

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178. Kidumule, F.M. (2025). The Impact of Intermittent Preventive Treatment for malaria on School absenteeism of primary school children in Handeni District Council. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malaria remains a major public health challenge in sub-Saharan Africa, including Tanzania, where school-aged children (SAC) bear a significant burden of asymptomatic infections, which leads to school absenteeism. To address this, Tanzania introduced Intermittent Preventive Treatment for school children (IPTsc) to reduce malaria-related morbidity and improve school attendance. This study aimed to evaluate the impact of IPTsc on school absenteeism among primary SAC students and to identify the socioeconomic factors associated with school absenteeism among these children in Handeni DC. **General objective:** To evaluate the impact of

IPTsc intervention for malaria prevention and socioeconomic factors on the school absenteeism rate of SAC in Handeni DC. **Methodology:** A quasi-experimental before-and-after study was conducted among 346 SAC from 13 primary schools in Handeni DC, a malaria-endemic area. Data on absenteeism and number of doses were obtained from school registers and IPTsc dose records, while questionnaires were used on sociodemographic (sex, age, class, ward, school) and socioeconomic factors (distance to school, household chores, income-generating activities, mode of transportation, road condition, climate, ITN use, housing type). Descriptive statistics (frequencies, percentages, medians, IQR) were used for summarization. The Wilcoxon SignedRank test compared absenteeism before and after IPTsc, while–Mann-Whitney U and Kruskal– Wallis tests examined group differences. Chi-square, Stuart-Maxwell, and Fisher's exact tests assessed categorical associations. Univariate and multivariable linear regression models were applied to analyze associations between log-transformed absenteeism rates and socioeconomic variables, adjusting for potential confounders. **Results:** IPTsc showed a positive outcome, with an increase in attendance by 6.1% and a decrease in absenteeism from 13% to 10%. Most SAC (91.9%) received all three IPTsc doses. However, the number of doses was not significantly associated with absenteeism. SACs not engaged in economic activities had about 27% higher absenteeism rate than those who engage, and this was highly statistically significant (p0.001). vi **Conclusion and recommendation:** IPTsc significantly reduced malaria-related absenteeism among SAC. Socioeconomic factors strongly influenced attendance. Annual IPTsc implementation is recommended in malaria-endemic areas, also to be integrated with multisectoral school health programs. Further research should assess broader impacts on health status, such as nutrition.

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179. Kihanda, J. (2025). Descriptive histomorphology of palatine tonsils among children undergoing tonsillectomy at a zonal referral hospital in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Palatine tonsils play a critical role in pediatric immune function, with their microarchitecture influencing susceptibility to disease. Despite the burden of tonsillar diseases in Tanzania, limited data exist on local histomorphological patterns that may underpin disease mechanisms. Purpose of the study: To explore histological patterns in pediatric palatine tonsils that may correlate with disease presentation. **Broad objective:** To evaluate the histomorphological characteristics of palatine tonsils in children undergoing tonsillectomy at a zonal referral hospital in Dar es Salaam. Rationale of the study: This study sought to uncover the microanatomical organization of pediatric palatine tonsils to better understand their role in local tonsillar disease pattern. **Materials and Methods:** This descriptive cross-sectional study analyzed 86 tonsillectomy specimens collected from children aged ≤15 years between March and May 2025. Gross morphology (weight, surface, consistency) and histological features (epithelial thickness, crypt density, and high endothelial venule [HEV] density) were assessed using H&E staining and digital image analysis. Statistical analysis was performed using SPSS v20, with significance set at $p < 0.05$. **Results:** Tonsillar hypertrophy was the most common surgical indication (54.7%). Heavier tonsils and smooth, soft surfaces were significantly associated with hypertrophy ($p < 0.001$), whereas recurrent tonsillitis correlated with irregular, firm tonsils. Surface epithelium was thicker

than crypt epithelium (14 ± 3 vs. 12 ± 2 cell layers), and HEV density was higher in the surface epithelium (2.01 ± 0.63 vs. 1.55 ± 0.58/HPF). No statistically significant differences in epithelial thickness, crypt number, or HEV distribution were observed between clinical groups. **Conclusion:** The study demonstrated conserved histological features across clinical groups with subtle tissue remodeling in disease states, suggesting that immunological and molecular responses may underlie the mechanisms of tonsillar disease in this population.

180. Kihwili, L. L. (2025). Evaluation of hypoglycemic potential of root and stem bark extracts and isolated compounds of *Osyris Lanceolata* Hochst. & Steud. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Diabetes is rapidly increasing in low- and middle-income countries (LMICs), where treatment costs create a major economic burden. Limited healthcare access often results in poor disease management, leading to serious complications like amputations, blindness, and heart disease. These challenges highlight the urgent need for affordable alternatives. This study evaluated the hypoglycemic potential of *Osyris lanceolata,* traditionally used to manage diabetes. **Objective:** This study aimed at evaluating the hypoglycemic effect of *O. lanceolata* (African sandalwood) root and stem bark extracts. **Methods:** Fresh root and stem barks of *O. lanceolata* were collected from Lushoto district in the Tanga region, Tanzania. After complete drying, they were ground and extracted by cold maceration for 72 hours at room temperature using methanol. The resulting solutions were concentrated, separately, using a rotary evaporator *in vacuo* at 40 ℃ to obtain dried crude extracts: the stem bark extract (SE) and root bark extract (RE). The hypoglycemic activity of stem bark and root bark crude extracts was evaluated *in vivo* using an oral glucose tolerance test (OGTT) in healthy adult albino mice. The mice were divided in four groups (n=4), Group 1 served as the negative control and received distilled water, Group 2 received the stem bark extract, Group 3 received the root bark extract and Group 4 served as the positive control and received glibenclamide. The blood glucose levels of each mouse were monitored for 3 hours using glucometer®, at 0.5 h, 1 h, 2 h, and 3 h. Data were analyzed using one way-ANOVA followed with Tukey's post-hoc test where *p*-value cut-off point was set at 95% (where $p<0.05$). The most active extract (stem bark extract) underwent phytochemical investigation in an effort to isolate bioactive compounds responsible for the observed hypoglycemic effect. The extract was subjected to silica gel open-column chromatography, using a DCM-MeOH gradient (100:0 → 0:100) and monitored by TLC to afford a total of 10 fractions (F1 to F10). 3 fractions were then subjected to *in vivo* evaluation for their hypoglycemic activity in mice using the OGTT model. Furthermore, the remaining fractions were subjected to further chromatographic separation and purification using various chromatographic techniques including Preparative Thin Layer Chromatography (PTLC) and size-exclusion chromatography using an open-column packed with Sephadex LH-20. This multi-step purification approach enabled the efficient isolation of distinct phytochemicals. Finally, the isolated compounds were analyzed using various spectroscopic techniques for physicochemical and structural characterization.Ethical approval for this study was obtained from the Muhimbili University of Health and Allied Sciences (MUHAS) through the Directorate of Research, Publications, and Innovation's Research Ethics Committee (REC) under certificate

number MUHAS-REC-02-2025-2639.**Results**: The stem-bark extract demonstrated the most potent hypoglycemic activity, significantly inhibiting the rise in blood glucose levels compared to the negative control ($p < 0.05$). However, among the three investigated fractions, none demonstrated a significant decrease in blood glucose levels ($p>0.05$) when compared to the negative control. Further separation and purification of remained fractions led to the isolation of 12 compounds, Compound **1**(3.0 mg), compound **2** (14.3 mg), compound **3** (5.8 mg), compound **4** (12.4 mg), compound **5** (17.5 mg), compound **6** (127.5 mg), compound **7** (62.9 mg), compound **8** (5.9 mg), compound **9** (2.8 mg), compound **10** (20.3 mg), compound **11** (21.7 mg) and compound **12** (55.6 mg). The elucidation of their structural and molecular characteristics by application of spectroscopic techniques is currently ongoing. **Conclusion & Recommendation**: The current study provides preliminary justification for the use of *Osyris lanceolata* stem bark extract as an alternative treatment for diabetes management. Further studies are recommended to evaluate the hypoglycemic activity of the isolated compounds and to elucidate their mechanisms of action.

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181. Kilasi, W. (2025). Experiences of informal caregivers regarding home-based care for stroke survivors in Dar es salaam, Tanzania. Muhimbili university of health and Allied Science.

Abstract

Background: Informal caregivers are crucial in providing home-based care for disabled or ill individuals worldwide. Stroke is a common condition that causes disabilities and limits an individual's daily life activities hence, it requires maximum assistance during recovery. Informal caregivers in low-income countries like Tanzania with limited rehabilitation services are critical for stroke survivors' home-based recovery. Besides, the limited skills and support among informal caregivers during the caregiving responsibilities may result in psychological, physical, and financial impacts. Therefore, it is essential to explore the insights of the informal caregivers of stroke survivors in home settings. **Aim:** To explore the experiences of informal caregivers regarding home-based care for stroke survivors in Tanzania. **Methods:** A qualitative explorative design was employed to gain participants' insights. Purposeful sampling was used to select participants. Nine (9) in-depth interviews were conducted using a semi-structured interview guide and audio-recorded. Data were analyzed thematically following verbatim transcription. Findings: Two themes emerged first: The Burden of Caregiving Responsibilities which was emerged from three categories: Limited Knowledge and Skills in Caregiving, Physical and Psychological Impact, and Coping Mechanisms. The second theme was: Facing Socioeconomic Challenges to Meet Care Needs which also emerged from two categories: Lack of Community and Medical Support, and Impact on Social and Economic Life. Conclusion: Informal caregivers for stroke survivors face numerous challenges. They are subjected to home-based care with limited skills and knowledge, limited healthcare access and social support leading to physical, psychological, social, and financial burdens. The study emphasizes the need for healthcare system to adopt an integrated and comprehensive strategy to successfully support Informal caregivers regarding home based care for stroke survivors to improve both informal caregiver well-being and patient outcomes. Key words: Stroke, Stroke Survivor, informal caregiver, Home-based care, Experience.

182. Kilemwa, P (2025). Assessment of the effect of bullying and harassment experienced by surgical residents on their psychophysical wellbeing in tertiary teaching hospitals in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Surgical residency is an inherently intense training environment vital for professional development, yet its high-pressure nature often fosters a culture of bullying and harassment. Existing global research indicates a concerning prevalence (27%–63%), which compromises resident psychophysical well-being, potentially leading to burnout, depression, and thoughts of dropping out. This ultimately risks negatively affecting the quality of patient care. **Aim:** This study aimed to assess the prevalence and effect of bullying and harassment on the psychophysical well-being of surgical residents in tertiary teaching hospitals in Dar-es-Salaam, Tanzania. **Methodology**: A cross-sectional study was conducted from August to December 2024 at two tertiary teaching hospitals (MNH and MOI). 149 surgical residents were randomly selected and completed a self-administered questionnaire using an adapted Negative Acts Questionnaire-Revised (NAQ-R). Data analysis utilized SPSS version 27, employing descriptive statistics, chi-square tests, and multivariate regression, with statistical significance set at $p<0.05$. **Results:** A high prevalence of workplace mistreatment was observed, with 95% of residents reporting experiencing bullying or harassment. Incidents were frequent, with 17.4% reporting daily and 30.2% reporting weekly harassment. Verbal abuse was the most common form (99.2%, $p<0.001$), primarily perpetrated by attending surgeons (98.1%) and nurses (96.8%). This widespread mistreatment significantly affected residents' psychosocial (96.9% affected, $p=0.001$) and physical health (95.7% affected, $p=0.034$). Furthermore, verbal abuse was identified as a significant independent predictor of decline in psychosocial well-being (aOR = 0.029, $p=0.016$). **Conclusions and Recommendations**: Bullying and harassment, particularly verbal abuse, are alarmingly widespread among surgical residents in Dar es Salaam and severely impact their well-being. Immediate action is imperative. Recommendations focus on adopting strict anti-bullying policies, creating safe reporting channels, and strengthening support systems to cultivate a respectful and healthy training environment.

183. Kilewo, N.G. (2025). Factors For Immediate Postpartum Contraceptive Uptake Among Women in the Postpartum Period at Morogoro Municipal, Tanzania. Muhimbil University of Health and Allied Sciences.

Abstract

Background: Utilization of contraception methods for spacing and limiting births during the postpartum period is still very low in developing countries. Early use of modern contraceptives during the postpartum phase may improve the health of mothers and children and prevent unintended pregnancies. Consequently, the effort must uncover the factors linked to women's use of contraceptives in the immediate postpartum period. **Objective:** Determine the proportion of immediate postpartum contraceptive use and the factors for using it among women in the postpartum period at Morogoro Municipality. **Methods:** A cross-sectional study design centered in facilities was used. 223 women were recruited for the study's sample size. The primary

investigator was overseeing the use of interviewer-administered questionnaires for data collection. Microsoft Excel version 2019 was used to enter, clean, edit, and code the data before being uploaded to SPSS version 24 for analysis. Pearson's chi-square test was used to determine whether there is a relationship between the dependent and independent variables using descriptive and bivariate analysis. Several factors were examined, and potential confounders were controlled for, using multivariable logistic regression. **Results:** We enrolled 223 participants. Their mean age was 26 years. The majority of the participants, 154 (69.06%), were married, and 104 (46.64%) were self-employed. 26.46% of these participants used immediate contraceptives. Age, grand multiparity (aOR = 3.11; 95% CI 1.85-16.81; p = 0.033), cesarean delivery (aOR = 2.63; 95% CI 1.24–5.57; p = 0.011), birth spacing interval (aOR = 8.02; 95% CI1.87-27.12; p = 0.017), and previous contraceptive counseling during antenatal care (aOR = 3.05; 95% CI1.80-13.81; p = < 0.023) and post-delivery counselling were the factors that were independently linked to immediate postpartum contraceptive use. **Conclusion:** The use of immediate contraceptives among women after giving birth was very low, 26.46%. Age, grand multiparity, cesarean section, number of living children, and contraceptive counseling during prenatal care and after delivery were the characteristics linked to immediate postpartum contraceptive uptake. To lower the high unmet need for contraception and manage short interpregnancy intervals, efforts must be undertaken to increase the use of immediate contraceptives among mothers who have just given birth.

184. Kilian, I.K. (2025). Short-Term Functional Outcome of Non-Operative Management In Pelvic Ring Injuries at Muhimbili Orthopedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pelvic ring injuries are relatively uncommon but result from high-energy trauma, often involving multiple systems and contributing to significant morbidity and mortality. Both stable and unstable fractures can lead to functional impairment following non-surgical treatment, primarily due to the risk of residual deformity. Despite a substantial number of patients receiving non-surgical management, functional outcomes at Muhimbili Orthopedic Institute (MOI) remain understudied. **Objective:** To evaluate short-term functional outcomes among adult patients with pelvic ring injuries treated non-surgically at MOI. **Methodology:** A retrospective cross-sectional study was conducted using data from the MOI Pelvic and Acetabula registry between August 2023 and February 2024. Adult patients treated non-operatively were assessed at 12 months post-injury using the Majeed Pelvic Score. Clinical variables were collected through structured questionnaires. Continuous variables were summarized using means and standard deviations, while categorical data were described using frequencies and percentages. Multivariable regression analysis was used to identify predictors of functional recovery, with statistical significance set at $p < 0.05$. **Results:** Thirty-six patients met inclusion criteria. Males accounted for 55.6%, with a mean age of 39 years; the majority (88.9%) were under 50 years. Tile B fractures predominated (72.2%). At 12 months, 80.6% achieved favorable functional outcomes. Multivariable analysis identified physiotherapy attendance and absence of concomitant injuries as significant predictors of recovery ($p < 0.01$). **Conclusion:** Most patients were young adults presenting with Tile B fractures. Favorable shortterm functional outcomes were associated with adherence to physiotherapy and absence of

associated injuries. These findings highlight the importance of individualized rehabilitation planning in the conservative management of pelvic ring injuries.

185. Kilimuhana, P.J. (2025). Prevalence and factors associated with work related stress among workers in the Steel mills company in Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Stress at work is becoming a major global public health issue, especially in high-risk and physically demanding industries like the production of iron and steel. Long term professional stress is linked to a number of negative health consequences, such as heart disease, mental health issues, and decreased productivity at work. Research on the prevalence and factors associated with work-related stress in the iron and steel industry is scarce, despite Tanzania's fast industrialization. Gaining an understanding of these elements is crucial to creating focused treatments that enhance employees' productivity and well-being. **Aim:** The purpose of this study is to assess the prevalence and factors associated with work related stress among workers in the Steel mills company in Dar es Salaam. **Material and methods:** This was quantitative, cross-sectional, analytical study conducted at Mikocheni Dar es Salaam for a period of 2 months (May to June 2025). A stratified random selection procedure was employed to enroll 149 workers of the industry from different job categories. Questionnaires with a well-structured question, such as the Perceived Stress Scale (PSS-10) to gauge stress levels, were used to gather the data. STATA version 15.1 was used to analyze the gathered data, and a p-value of less than 0.05 was deemed statistically significant. Microsoft Excel 2013 was used to create a bar chart that illustrates the prevalence of stress related to the workplace. **Results:** The overall frequency of work-related stress was 70.5% among 149 enrolled workers, whose mean age was 39.99 (SD: 9.66). Following multivariable robust Poisson regression analysis, it was discovered that characteristics such as job instability, work overload, and family size greater than four people were independently associated with work related stress **Conclusion:** According to this study, a high incidence of work-related stress (70.5%) was observed among workers in this industry, and factors that were associated with this stress included job uncertainty, an excessive workload, and having a larger family.

186. Kimaro, A. J. (2025). Clinical Profile and Overall Survival Among Pediatric Oncology Patients Treated with Metronomic Chemotherapy at Muhimbili National Hospital from January 2018 to December 2023. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pediatric malignancies contribute significantly to childhood morbidity and mortality, particularly in low and middle-income countries (LMICs), where treatment delays, limited oncology infrastructure, and advanced-stage presentation are common. Metronomic chemotherapy, a low-dose, continuous treatment approach, has emerged as a viable option for managing refractory and advanced pediatric cancers in resource-constrained settings. However, limited local data exist on its outcomes. **Objective:** To determine the clinical Profile and overall survival of pediatric oncology patients treated with metronomic Chemotherapy at Muhimbili

National Hospital (MNH) between January 2018 and December 2023.**Methods:** This was a retrospective cohort study involving 96 pediatric cancer patients treated with metronomic Chemotherapy at MNH. Data were extracted from patient files and caregiver follow-ups. Statistical analysis was conducted using SPSS version 27. Kaplan-Meier analysis was used to estimate 2-year overall survival. Univariate and multivariate logistic regression were applied to identify predictors of survival. **Results:** The mean age at diagnosis was 76.49 ± 56.72 months. The majority were under 5 years (51.0%) and male (53.1%). Most parents were peasants (44.8%) and had only a primary education (30.2%). Health insurance coverage was low (32.3%). Ocular tumours (20.8%) and nephroblastoma (17.7%) were the most frequent diagnoses. At metronomic chemotherapy initiation, 96.9% of patients were in stage 4, with disease progression (77.1%) being the leading indication. Etoposide monotherapy was the most common regimen (81.3%). Toxicities were frequently gastrointestinal (40, 41.7%), followed by hematological (11, 11.5%). Overall, 40 patients (41.7%) experienced at least one side effect during treatment. The 2-year overall survival was 28.0% (95% CI: 19.1–36.9), with a median survival of 8 months. Age ≥15 years (aOR = 6.01; 95% CI: 2.12–17.04; p = 0.001) and stage 4 disease at initiation (aOR = 2.26; 95% CI: 1.13–4.50; p = 0.021) were significantly associated with poor survival. Conversely, sarcoma histology was associated with better survival (aOR = 0.28; 95% CI: 0.10–0.78; p = 0.015). **Conclusion:** The findings highlight poor overall survival among pediatric patients treated with metronomic chemotherapy, primarily due to late-stage presentation. Despite this, metronomic chemotherapy remains a promising, low-toxicity, and feasible option for palliation in LMICs. Its broader adoption and integration into pediatric oncology protocols warrant further attention.

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187. Kinyota, K. (2025). The gross morphological and histological features of placentae in anemic and non-anaemic mothers and their potential impact on pregnancy outcomes in Mwananyamala Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The placenta is a temporary fetomaternal organ that develops during pregnancy, and its role is to support the normal growth and development of the fetus. Proper placentation and placenta development allow optimal growth, development, and survival of the fetus. Prenatal health status of both the fetus and the mother can be traced back to the placenta, meaning a placenta can be regarded as a determinant of neonatal outcome. Maternal anemia during pregnancy also affects the placenta, causing alteration of the placenta's structure both histologically and morphologically. While multiple studies have documented placental alterations in maternal anemia, most of them have been done among people of Asian descent and Caucasians; none of these studies have been conducted in our setting. This study aims to address this gap by investigating placental changes in maternal anemia and their impact on pregnancy outcomes in Dar es Salaam, Tanzania. Findings from this study will provide insights into placental alterations due to maternal anemia, their impact on neonatal outcomes, and help in setting up targeted interventions and monitoring programs for pregnant women with anemia to improve both fetal and maternal well-being in this group. **Objective:** To compare the gross morphological and histological features of the placenta in anemic and non-anemic pregnant women and explore their potential impact on pregnancy outcomes, including birth weight and Apgar scores, in Regional Referral Hospitals in

the Dar es Salaam region. **Material and methods:** This was a hospital-based comparative cross-sectional study that was conducted at Mwananyamala regional referral hospitals from February to May 2025. A total of 52 placentas (26 from anemic mothers and 26 from non-anemic mothers) were studied. Morphological parameters, including placental weight, volume, area, and thickness, were taken, while for histological analysis, the cut sections were processed and then stained with Harris' Hematoxylin and Eosin stain and observed under a light microscope. Neonatal outcomes, including birth weight and 5-minute Apgar scores were also taken. All data were analyzed using a quantitative statistical approach, with Student's t test for continuous data and chi-square tests for categorical data, with significance set at $p<0.05$. **Results:** The gross morphological parameters of the placenta, placental weight, volume, area, diameter, and thickness were significantly higher in anemic mothers compared to non-anemic mothers ($p<0.01$). The mean placenta diameter, area, and thickness had a significant inverse relationship with neonatal birthweight, whereas mean placenta weight and volume had a non-significant negative correlation with neonatal birthweight. Regarding the 5-minute Apgar scores, mean placental weight and thickness had a non-significant inverse association with Apgar scores. Microscopic study of the placenta revealed that the presence of syncytial knots, intervillous thrombosis, wider intervillous space, vascular proliferation, and cytotrophoblast proliferation were significantly more prevalent in anemic mothers ($p<0.005$). The presence of syncytial knots, intervillous thrombosis, and terminal vascular proliferation had a significant negative correlation with neonatal birth weight ($p<0.018$), whereas all histological changes had a non-significant inverse association with 5-minute Apgar scores. **Conclusion:** Anemia in pregnancy exerts a profound impact on the placenta, significantly altering its gross morphological parameters and histologically causing higher rates of syncytial knotting, intervillous thrombosis, and vascular proliferation. Although these changes are likely compensatory, they were associated with adverse neonatal outcomes, mainly reduced birthweight.

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188. Kipuyo, N. (2025). Assessment of the Magnitude and Associated Factors for Acute Kidney Injury in Post-Operative Cardiac Surgery Patients at Jakaya Kikwete Cardiac Institute, Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cardiac surgery-associated acute kidney injury (CSA-AKI) is a significant postoperative complication, affecting up to 40% of cases and increasing mortality by fivefold. Despite its impact, data on CSA-AKI in sub-Saharan Africa, including Tanzania, is scarce. With increasing cardiac surgery investments in Tanzania, understanding its burden is crucial for developing effective prevention and management protocols locally. **Aim:** To evaluate the prevalence of CSA-AKI and associated factors in patients undergoing cardiac surgery at Jakaya Kikwete Cardiac Institute (JKCI) in Dar es Salaam, Tanzania. **Methodology:** Cross-sectional study, conducted over 8 months (September 2024 to March 2025), included 177 adult cardiac surgery patients. Serum creatinine was measured at baseline, and 24, 48, and 72 hours post-operatively. Demographic and clinical data were analysed using SPSS version 27. Chi-square tests were applied for univariate analysis, while logistic regression was used to identify independent factors. A p-value of ≤ 0.05 was considered statistically significant. Approval for the study was obtained from the MUHAS Research Ethics Committee. **Results:** This study at the Jakaya Kikwete

Cardiac Institute revealed a 52% incidence of Acute Kidney Injury (AKI) in post-operative cardiac surgery patients, highlighting a significant local burden. Prolonged cardiopulmonary bypass (CPB) and anaesthesia duration emerged as a critical independent predictor (AOR=0.005; P=0.001 for 121-180min CPB). Multivariate analysis also identified male gender (AOR=5.01; P=0.003) as a strong independent predictor of AKI. Patients with AKI experienced significantly longer ICU stays. Factors like older age, obesity, high baseline urea, and comorbidities such as ischemic heart disease, diabetes, and hypertension were also frequently associated with AKI. **Conclusions and Recommendations:** This study found that cardiac surgery patients are at considerable risk of developing acute kidney injury. Prolonged anaesthesia and CPB time were independent predictors, significantly increasing ICU stays. Recommendations focus on enhanced pre-operative risk stratification, optimized intraoperative management, intensified postoperative monitoring, and further research.

189. Kiranga, E.D. (2025). The influence of out-of-pocket payment on healthcare access and coping strategies among uninsured clients at Dodoma regional referral hospital, Dodoma, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Uninsured individuals in Tanzania rely solely on out-of-pocket (OOP) payments for healthcare, creating financial barriers that delay access and increase economic vulnerability. Although OOP costs hinder universal health coverage (UHC), research on their impact on uninsured clients is limited, especially regarding coping strategies for healthcare expenses. This study aims to explore OOP payment levels, their effect on healthcare access, and the coping mechanisms of uninsured clients at Dodoma Regional Referral Hospital. **Objective:** To determine the influence of out-of-pocket payments on healthcare access among uninsured clients at Dodoma Regional Referral Hospital and to determine the coping strategies. **Materials and Methods:** This analytical cross-sectional study employed a quantitative approach to evaluate healthcare access using the modified Access to Health Services Index (AHSI), which includes dimensions of availability, affordability, barriers, and acceptability. A systematic sampling technique was used to select 400 uninsured clients at Dodoma Regional Referral Hospital. Descriptive statistics summarized out-of-pocket expenditures and coping mechanisms, while binary logistic regression assessed the influence of out-of-pocket payments on healthcare access. A composite healthcare access score served as a dependent variable, and significance determined by p-value < 0.05 and 95% confidence interval (CI). Results: Uninsured clients spent an average of TZS 70,520 per healthcare visit (SD = 74,116). Logistic regression showed that individuals in the highest out-of-pocket payment quartile had significantly higher odds of inadequate healthcare access compared to those in the lowest quartile (AOR = 0.07, 95% CI: 0.03–0.16). Coping strategies were common, with 64.0% borrowing money, 56.5% selling assets, and 59.0% resorting to alternative treatment methods. **Conclusion:** Uninsured clients face substantial out-of-pocket costs that reduce healthcare access, especially among older, unemployed, and low-income groups. Many copes by borrowing, selling assets, or seeking alternative care, underscoring the need to expand insurance coverage and awareness to reduce financial vulnerability.

190. Kisheo, F.G. (2025). Hypertension self-care management, awareness and its associated factors among patients attending clinic at Hai Council Hospital Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hypertension affects an estimated 33% of adults worldwide. In Tanzania, its prevalence ranges from 20% to 38%, with chronic kidney disease contributing to higher rates. However, limited studies have explored self-care practices among hypertensive patients in Tanzania. This study aimed to assess Hypertension self-care management, awareness and its associated factors among patients attending clinic at Hai Council Hospital. **Materials and Methods:** A cross-sectional study was conducted at Hai District Hospital, Kilimanjaro Region, Tanzania. A structured questionnaire, Hypertension Self-Care Activity Level Effect (H-Scale), and Hypertension Evaluation of Lifestyle and Management (HELMScale) captured sociodemographic data, self-care management practices, and awareness. Data were analyzed using frequency distribution, Chi-square, and regression analysis. **Results:** A total of 270 hypertensive patients participated. Among them, 45.2% had been diagnosed for over five years. Overall, 55.2% practiced self-care management, but only 22.6% engaged in regular physical activity. Adherence rates to medication and weight management were 95.2% and 68.5%, respectively. Additionally, 67.4% followed a low-salt diet, 84.4% were non-smokers, and 71.9% avoided second hand smoke. Moderate awareness of self-care management was found in 64.4% of patients. Logistic regression showed that age above 50 was significantly associated with good self-care management (p=0.004, OR=0.0662, 95% CI=0.011-0.341). **Conclusion and recommendation:** While self-care practices among hypertensive patients in Hai were generally fair, physical activity levels remained notably low, and awareness of selfcare management was only moderate. Age and family support emerged as significant factors influencing adherence to good self-care practices. To address these gaps and enhance blood pressure control, targeted health awareness programs focusing especially on the importance of physical activity and the role of social support should be implemented within the community.

191. Kisoka, M.L. (2025). Obstructive coronary artery disease patterns, treatment modality and outcome among patients undergoing coronary angiography at Jakaya Kikwete Cardiac Institute, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cardiovascular diseases (CVD) have become a global burden with 32% annual global deaths being attributed to CVDs. Within CVDs, Coronary artery disease account for over 17-millions of deaths annually. Urbanisation and lifestyle changes on top of traditional cardiovascular conditions are among the drivers for this shift. **Aim of the study:** This study aimed to asses Obstructive Coronary Artery Disease (OCAD) patterns, treatment modality and short-term outcomes among patients undergoing coronary angiograph at Jakaya Kikwete Cardiac Institute. **Methodology:** This was a prospective observational cohort study conducted at the Jakaya Kikwete Cardiac Institute (JKCI) catheterization lab from July 2024 to February 2025. Patients with OCAD were enrolled using convenience sampling. Data were collected using a structured questionnaire

that captured socio-demographics and clinical and angiographic characteristics, treatment modalities given, and short-term outcomes. Angina symptom progression and 90-day survival were assessed. Statistical analysis was performed using SPSS version 27.0. Descriptive statistics summarized baseline characteristics. Kaplan-Meier and log-rank tests evaluated survival across treatment groups. Generalized Estimating Equations analysed changes in clinical stages over time, with significance set at $p < 0.05$. **Results:** Out of 103 OCAD patients recruited, majority were male (72.8%) with a mean age of 64 ± 8 years and the common comorbidities being hypertension (89.3%) and diabetes mellitus (50.5%). Patterns of OCAD observed were as follows, single (32%), double (34%), and triplevessel (34%) diseases and most affected artery was the Left Anterior Descending (LAD) artery seen in three-quarter (75.7%). Percutaneous Coronary Intervention (PCI) was the most common intervention (73.8%), followed by Optimal Medical Therapy (OMT) (13.6%) and Coronary Angioplasty Bypass Graft (CABG) (12.6%). On outcomes studied, there was significant angina symptoms improvement observed across all treatment modalities offered, however persistent angina symptoms were observed among elderly and hypertensive patients. Overall mortality vi observed was 6.8%, where those who underwent CABG had lowest survival probability which was marked within first 20 days of follow up. **Conclusion and Recommendation:** In this Tanzanian cohort, obstructive CAD presented with a high burden of multivessel coronary artery disease. Despite overall symptomatic relief, CABG was associated with the highest short-term mortality. These findings highlight the need for modifiable risk control, early diagnosis and enhanced follow-up, especially among high-risk groups such as the elderly, hypertensive patients and those who are undergoing CABG.

192. Kivuyo, A.P. (2025). Clinicopathological significance of her2/neu immunohistochemistry overexpression in patients with urinary bladder cancer at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Urinary Bladder cancer (BC) is a global health concern, accounting for 3% of cancer cases worldwide, with increasing incidence in developing regions like Africa. In Tanzania, BC patients often present late, and squamous cell carcinoma is the most common subtype. Despite standard treatments, challenges such as recurrence and drug resistance persist. Overexpression of Her2/neu protein, linked to aggressive tumor behavior and poor prognosis in various cancers, has gained attention as a potential biomarker and therapeutic target. The current study has evaluated the Her2/neu expression in BC patients at Muhimbili National Hospital and its relation with clinicopathological features, offering insights into its prognostic and therapeutic value. **Aim/Broad objective:** The study aimed to determine the relationship between HER2/neu protein overexpression and clinicopathological features of patients with urinary bladder cancer at Muhimbili National Hospital. **Material and Methods:** A descriptive, retrospective cross-sectional study was conducted at the Histopathology Unit of Muhimbili National Hospital (MNH) from January 2023 to December 2024. A total of 137 formalin-fixed paraffin-embedded bladder cancer tissue samples were analyzed. Immunohistochemistry (IHC) was performed using anti-HER2 antibodies and scored according to the College of American Pathologists (CAP) guidelines. Clinicopathological data were extracted from electronic records and analyzed using STATA v17.

Associations between HER2/neu expression and patient demographics, histological subtype, tumor grade, and schistosomal ova presence were statistically tested using chi-square. **Results:** Among 137 bladder cancer cases, 24/137, (18%) showed strong (3+), 19/137, (14%) moderate (2+), and 10/137, (7%) weak (1+) HER2/neu expression, while 84/137, (61%) were negative. Strong expression was significantly higher in high-grade urothelial carcinoma (17/24, 70.8%) than in squamous cell carcinoma (6/24, 25%) ($p = 0.001$). HER2/neu overexpression was significantly more common in bladder cancer patients without schistosomal ova (22/24, 91.7%) compared to those with infestation (8.3%) ($p = 0.033$), vii indicating an inverse association between HER2/neu overexpression and schistosomal infection. **Conclusion:** This current study shows a significant relation between HER2/neu overexpression and invasive urothelial carcinoma, but low expression in schistosomal-related cases. This suggests distinct oncogenic pathways between endemic vs. non-endemic regions. A subset of patients may benefit from HER2-targeted therapies if this confirmatory testing is available. The findings underscore the need to integrate immunohistochemistry testing into patient care. Further investigations are warranted to examine the cytogenetic and pathogenetic characteristics of HER2/neu, as well as the differences in tumor biology between schistosomal and non-schistosomal cases.

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193. Komba, J. J. (2025). Prevalence of metabolic bone and associated factors among preterm babies admitted at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Metabolic bone disease is one of the preventable and reversible complications of prematurity. There is an increase in the survival of premature neonates with modern advancements in neonatal intensive care; however, the complications due to metabolic bone disease of prematurity affect the growth and development of premature babies later in their lives. Understanding the prevalence and associated factors of metabolic bone disease among premature babies will help to develop evidence-based guidelines to prevent these conditions and improve outcomes. Objectives: To determine the prevalence of metabolic bone disease and associated factors among preterm babies admitted at Muhimbili National Hospital (MNH). **Methodology:** A hospital-based analytical cross-sectional study was conducted on premature neonates; born at 32 weeks gestation or less, admitted to the MNH neonatal ward. Data about participants' demographics, maternal factors, neonatal factors, and clinical profiles were collected using a structured questionnaire. Blood samples were collected from infants between the ages of 4 and 12 weeks and serum alkaline phosphatase (ALP) and phosphorus levels were measured. Metabolic bone disease was defined by biochemical markers of serum phosphate level of less than 5.6mg/dl (less than 1.8mmol/l) and Serum ALP higher than 900IU. Descriptive data was summarized using means and frequencies while chi-square and logistic regression were used to assess factors associated with metabolic bone disease. **Results:** Among 240 participants, most were female 136(56%). The majority of the participants had a birth weight of 198 (80.4%) and half of the participants were very preterm neonates born between 28- and 32-weeks' gestation. About half of the mothers (51.5%) had pre-eclampsia. The prevalence of metabolic bone disease was 14.6% (N = 35). A quarter of the participants were not receiving any vitamin supplement and only 2.3% were

receiving adequate doses of vitamin D as per guidelines. In univariate analysis, infants born to mothers aged>30 years had 2 times the odds of developing the metabolic bone disease (P= 0.057) while extreme preterm infants had 4 times the odds of developing metabolic bone disease. Extreme low birth weight infants had 13 times the odds of developing metabolic bone disease in Multivariable analysis (P<0.001). **Conclusion:** 14 % of infants with very low birth weight and gestation age of less than 32 weeks have a risk of developing metabolic bone disease. Only about 2.3%of the participants were on multivitamins recommended by Tanzania Neonatal guidelines. Neonatal factors associated with an increased risk of Metabolic bone disease were extremely low birth weight and extreme preterm while pre-eclampsia and mother age of more than 30 were the maternal factors associated with Metabolic bone disease. **Recommendation:** Early screening and monitoring of metabolic bone disease by using ALP and Phosphorus should be done, especially for extremely preterm and extremely low-weight infants. There is a need to review and reinforce the strategies to ensure preterm infants receive adequate amounts of supplemental vitamin D.

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194. Komba, P. (2025). Occupational exposure to chemical disinfectants, and health-related symptoms among nurses and medical attendants in Kibaha, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Occupational exposure to chemical disinfectants poses significant risk to healthcare workers, especially nurses and medical attendants. There is limited of information on level of exposure and symptoms experienced in Tanzania. **Objective:** To determine the prevalence of occupational exposure to chemical disinfectants, risk factors, and health related symptoms among nurses and medical attendants in Kibaha, Tanzania. **Material and Methods:** A cross-sectional analytical study was conducted among 290 Nurses and Medical Attendants selected using multistage sampling technique. The data collection tools were structured questionnaire and observational check list. Data analyzed by Poisson regression with robust standard errors to estimate adjusted prevalence ratios (aPR) and 95% confidence intervals (CIs) for associations between exposure and symptoms. **Results:** Majority of participants were female (68.3%) with a mean age of 36.8 years. The high exposure group had significant high prevalence of health-related symptoms compared to low exposure group for eye/nasal symptoms (aPR = 1.36, CI: 1.08 – 1.71, p = 0.009), chest symptoms (aPR=2.93, CI: 1.95 – 4.40, p<0.001), skin symptoms (aPR=1.60, CI: 1.35 – 1.88, p<0.001) and systemic symptoms (aPR=4.00, CI: 2.14 – 7.48, p<0.001). Use of surgical masks (aPR = 7.66, CI: 2.02 – 29.1, p = 0.003) and working in high-exposure sections (aPR = 2.37, CI: 1.92 – 2.93, p<0.001) increased exposure risk, while adequate ventilation was protective (aPR = 0.79, CI:0.65 – 0.95, p = 0.011). **Conclusion and Recommendations:** A large proportion of nurses and medical attendants are highly exposed to chemical disinfectants and reported health related symptoms associated with their exposure. There is an urgent need for compliance of safety measures particularly proper PPE, improved ventilation, spill management protocols, and training for staff working in high risk work sections.

195. Kombo, F.S. (2025). Food environment and overweight and/or obesity among secondary school adolescents aged 15-19 years in Ilala Municipal Council, Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Overweight and/or obesity among adolescents are rising globally, including in Tanzania, particularly in urban areas such as Dar es Salaam, where dietary and lifestyle transitions are rapid. Schools play a crucial role in shaping eating behaviors, yet limited evidence exists on the influence of school food environments on adolescent nutrition in Tanzania. **Objective:** To assess factors for overweight and/or obesity related to the school food environment among secondary school adolescents in Ilala Municipal, Dar es Salaam. **Methods:** A cross-sectional analytical study was conducted among 476 adolescents aged 15 19 years between April and May 2025. Data were collected using questionnaires and observation checklists. Anthropometric measurements were calculated following the WHO standards, and BMI for age was used in classifying overweight and/or obesity. Data analysis involved descriptive statistics and logistic regression with a significance level set at $p < 0.05$ and a 95% confidence interval. **Results:** The prevalence of overweight and/or obesity among the school adolescents was 16.6%. Fried foods were the most accessible food, with 64.3% of respondents consuming them daily, while legumes and nuts were rarely consumed (23.9%). Most students (97.3%) had money for food, with nearly half of them spending 500–1500 TZS daily. Frequent consumption of fried foods increased the odds of overweight and/or obesity (AOR = 3.65, 95% CI: 1.82–7.30). Higher expenditure on food was also associated with the risk of overweight and/or obesity, whereby students spending 1500–2500 TZS (AOR = 3.21, 95% CI: 1.39–7.42) and >2500 TZS (AOR = 3.77, 95% CI: 1.52–9.32) were at a greater risk. After adjusting for potential confounders in the multivariate analysis, female students had a reduced risk (AOR = 0.31, 95% CI: 0.18–0.53). Mediation analysis and interaction effects were not assessed in this study. **Conclusion and recommendation:** Unhealthy food availability and higher food expenditures in schools contribute to adolescent overweight and/or obesity in Ilala Municipal. School-based interventions to improve food options and promote healthier eating are recommended.

196. Kombo, H.K. (2025). Risk Distribution and Health Care Utilization Across Multiple Health Insurance Funds in Urban District – Zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The global landscape of health insurance systems is characterized by diverse approaches, often involving the establishment of multiple health insurance funds to cover different segments of the population. The result of the fragmentation of health insurance funds raises concerns about the equitable distribution of health risks, potentially impacting overall system efficiency. Currently, little is known about the existing variations in risk distribution across the public (New Zanzibar Health Services Fund (ZHSF), NHIF) and private health funds in Zanzibar. **Objective:** This study aimed to assess risk distribution and health care utilization across multiple health insurance funds in the Urban District of Zanzibar. **Methods:** This research employed an

analytical cross-sectional study design. The sample size was 383 households, and data were collected through surveys. Multistage sampling was employed to collect quantitative data from two (2) wards within 5 Administrative Shehia of the Urban District of Zanzibar. Descriptive analysis was applied to demonstrate risk distribution and health care utilization. Chi-square test was used to determine variations of identified risk factors across public insurance, private insurance, and uninsured households. In addressing specific objective 1, logistic regression analysis was used to determine risk factors associated with utilization of health services in the urban district of Zanzibar. **Results:** From the total of 383 respondents involved in the study, 42% were enrolled in public schemes, 18% in private schemes, and 40% were uninsured individuals. The percentage enrollment of registered individuals in private insurance schemes is lower compared to the public insurance scheme, which could be due to low motivation of individuals to access private insurance schemes. Risk factors associated with health care utilization were self-reported health status, age, household size, illness episodes, long-term illness, health behavioral factors, and insurance membership status. Individuals in households with 6+ members, being insured, having long-term illness, and having chronic diseases were associated with higher odds of utilization of healthcare services. However, individuals in the age group of 45-54 years, with illness occurrence in the last 4 weeks, and with smoking behavior were associated with lower odds of utilizing healthcare services. Analysis on the distribution of risk factors highlighted those un-insured individuals with a household size of 1-5 members had the highest odds of risk distribution. Uninsured individuals also had higher proportions of risk distribution related to health behavioral factors. An acute illness episode was associated with higher odds of risk distribution within the "public scheme" households compared to the private scheme and uninsured individuals. **Conclusion and recommendations:** This study reveals that risk distribution across multiple health insurance schemes plays a pivotal role in influencing health service utilization among insured (public and private schemes) and non-insured individuals. Study results highlight that uninsured individuals had the highest concentration of risk factors associated with increased utilization of healthcare services compared to insured members in the private and public insurance schemes. Equally, there exist actual variations in the distribution of health risks which had implications for equity to the extent that high risk members are unequally distributed among health insurance funds. These significant results confirm the importance of reducing fragmentation in risk pooling arrangements, optimizing resource allocation, enhancing healthcare access, and improving the overall quality of healthcare services in the Zanzibar Urban District. Given the variations in the distribution of health risks among the existing health insurance schemes, the study recommends on enhancing insurance coverage through: (i) provision of essential healthcare services to all segments of the population; (ii) involving the community in decision making process; and (iii) conducting outreach activities related to mobilization and sensitization of un-insured individuals to enroll in the insurance schemes. Emphasis is also given on conducting more empirical evidence-based studies and information sharing on existing variations in risk distribution and risk management strategies within health financing systems that are essential for informing policymakers, health insurance providers, and stakeholders to better understand and address risk distribution challenges in health insurance funds.

197. Kombo, M.K. (2025). Adherence To Iron and Folic Acid Supplementation and Associated Factors Among Pregnant Women Attending Antenatal Clinics in Mjini Magharibi Region, Unguja, Zanzibar, 2025. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The WHO recommends pregnant women take a daily supplement containing 400 µg of folic acid and 60 mg of elemental iron throughout pregnancy. Despite this recommendation, there is a low adherence to these supplements in several countries, particularly in low-resource countries. **The study aimed** to assess adherence to iron and folic acid supplementation and associated factors among pregnant women attending antenatal clinics in health facilities in Mjini Magharibi region, Zanzibar. **Methodology:** An explanatory sequential design was employed for this study, conducted in selected health facilities in Mjini Magharibi, Zanzibar. The quantitative part utilized an analytical cross-sectional design. Multistage Cluster sampling was employed to select participants for the quantitative phase. Participants for the qualitative phase were selected via purposive sampling. Quantitative data were collected via structured questionnaires administered to pregnant women, while qualitative data were gathered through in-depth interviews (IDIs) with both pregnant women and health care workers. Quantitative data were analyzed using Stata version 15.1, with results presented descriptively using frequencies and percentages. Proportions were used to describe the prevalence of IFAS adherence, and chi-square tests were utilized to assess comparisons between different variables. Poison regression and Modified Poisson regression were used to assess the association of various respondent characteristics with IFAS adherence. The qualitative data were transcribed, coded, and analyzed using NVivo software, version 10. The analysis adopted a thematic approach, allowing for a comprehensive exploration of the various themes that emerged during the IDIs. The themes identified were triangulated with quantitative findings, ensuring a robust and comprehensive interpretation of the data. **Results:** Out of 714 pregnant women enrolled in the study, the adherence to iron and folic acid supplementation (IFAS) was 59.9% (n = 714), as determined through self-report and pill count. Factors significantly associated with adherence included being employed (APR = 1.16, 95% CI: 1.02, 1.32). Knowledge of IFAS benefits (APR = 1.18, 95% CI: 1.02, 1.36) and initiating antenatal care (ANC) in the second or third trimester (APR = 1.16, 95% CI: 1.02, 1.32). Most participants (94.8%) reported receiving IFAS at ANC clinics, and 85.6% were aware of its benefits. However, only 24.7% had attended ANC more than four times. Qualitative findings revealed that while IFAS tablets were consistently available, challenges remained in health education, provider communication, and staff training, which affected the quality of counselling and contributed to suboptimal adherence. **Conclusion:** The study revealed a moderate level (59.9%) of adherence to iron and folic acid supplementation among pregnant women attending ANC in Mjini Magharibi, Zanzibar. Individual factors such as occupation, having knowledge on benefit of IFAS, and time at the first visit are significantly associated with IFAS. Also, qualitative findings highlight that while IFAS is available, gaps in health education and counselling delivery due to work overload, provider training, and communication may undermine its optimal use.

198. Kessy,E.(2025). Proportion of escorted pregnant mothers and their perceptions on partner escort at antenatal care in meru district, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: This study examined the frequency of escorted pregnant mothers to antenatal care (ANC) services and pregnant mothers' perceptions of partner escort in Meru District, Tanzania. The World Health Organization underscores the importance of providing high quality care throughout pregnancy, childbirth, and the postnatal period. Partner escort during ANC plays a critical role in enhancing emotional support, strengthening family relationships, and improving health outcomes for both mothers and newborns. Gaining insights into how pregnant mothers perceive male participation is vital to promoting greater partner engagement and improving overall care experiences.**Methods:** A descriptive cross-sectional study was conducted among 384 pregnant women attending ANC in Meru District. Simple random sampling was used, and data were collected through face-to-face interviews with structured questionnaires. Key variables included partner escort to ANC, male behaviors, and mothers' perceptions of escort. Data were analyzed quantitatively using SPSS to generate descriptive and inferential statistics. Reliability of perception measures was checked with Cronbach's alpha. Ethical approval was obtained from the Muhimbili University of Health and Allied Sciences, and informed consent was secured from participants. The study was carried out over 17 months with a budget of 2.2 million Tanzanian shillings.**Results:** Findings revealed low percent of escorted pregnant mothers to ANC (48.2%). Out of 185 escorted pregnant mother (64.3%) were rarely escorted and 35.7% were escorted in all visits. Key barriers to male escort included cultural norms, lack of awareness, embarrassment, and low self-confidence. Nevertheless, most pregnant mothers expressed favorable views toward partner escort. Approximately 95% reported feeling more supported when accompanied by their partners, 83.6% noted better preparedness for childbirth, and 87.5% reported improved ANC experiences. All participants agreed that the healthcare system should actively promote male participation.**Conclusion:** In conclusion, although pregnant mothers value the presence of their partners during ANC, various sociocultural factors limit male escort. The study recommends targeted community education initiatives to challenge negative beliefs, increase male awareness of ANC's importance, and enhance the male-friendliness of healthcare settings. Furthermore, health policies should incorporate partner escort as a key strategy for improving maternal and neonatal health outcomes, particularly in settings like Meru District.

199. Kuboja, N. E. (2025). Frequency of disease phase, concordance between the prognostic risk stratification scores and their predictive value for early treatment response in chronic myeloid leukemia patients. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic myeloid leukemia (CML) is a clonal stem cell disorder defined by the presence of the Philadelphia chromosome and the resulting BCR-ABL1 fusion oncoprotein. According to the WHO 2022 criteria, CML progresses through chronic and blast phases, which are critical for guiding treatment and prognosis. In chronic phase (CP) CML, prognostic risk stratification scores (PRSS); including Sokal, Hasford, EUTOS, and ELTS complement disease phase by classifying patients into risk groups that guide therapy and predict outcomes like complete hematological response and early molecular response. However, the distribution of disease phases based on the updated WHO 2022 criteria, the agreement among these scoring systems, and their predictive value for CHR and EMR in the local setting have yet to be clearly determined. **Objective:** To determine the frequency of disease phase, concordance between the PRSSs, and the predictive value of PRSS for CHR and EMR in chronic myeloid leukemia patients. **Methods:** This retrospective cohort study analyzed data from 148 newly diagnosed CML patients between January 2022 and December 2024 using medical records. Descriptive statistics were used to summarize demographic, clinical, and laboratory features, including disease phase. Concordance between prognostic risk scoring systems (PRSS) was evaluated using Cohen's Kappa. Associations between PRSS risk groups and treatment outcomes (CHR and EMR) were assessed using logistic regression and Chi-square tests with statistical significance set at $p < 0.05$. The predictive accuracy of each PRSS was determined by the Area Under the ROC Curve (AUC), with higher AUC values indicating better discriminatory performance. **Results:** Among 148 newly diagnosed CML patients classified using the WHO 2022 criteria, 94.6% were in the CP, with over half (56.4%) meeting high-risk CP criteria. The study revealed significant discordance among four PRSS; Sokal, Hasford, EUTOS, and ELTS with only moderate agreement between Sokal and ELTS ($\kappa = 0.51$), and poor or no agreement between others. Although all scoring systems demonstrated high sensitivity for predicting CHR, and to a lesser extent EMR, none showed a statistically significant association with either outcome. vi Additionally, all scores lacked sufficient specificity and overall discriminative power for both CHR and EMR**. Conclusion:** The existing prognostic risk stratification scores were developed to predict outcomes other than early treatment responses like CHR and EMR. Their limited accuracy in predicting early response in Tanzanian CML patients highlights the need for new models focused specifically on early treatment outcomes.

200. Kulwa, M. (2025). Assessment of Lean Manufacturing Practices in Tanzanian Pharmaceutical Industries. Muhimbili University of Health and Allied Sciences.

Abstract

Background: In the current knowledge-driven economy, pharmaceutical industries around the world are increasingly adopting lean as an effective manufacturing strategic approach to maintain competitiveness in the global market. In Tanzania, enhancing the pharmaceutical industry has become a priority to improve access to high-quality, safe, effective and affordable medicines, vaccines and medical devices. However, the adoption and implementation of lean manufacturing in pharmaceutical industries remain limited. Understanding the extent of lean implementation and barriers is essential for informing strategies to improve competitiveness in the global market. **Objective:** This study aimed to assess lean manufacturing practices in pharmaceutical industries by analysing the awareness, tools, barriers and strategies for implementing lean manufacturing. **Materials and Methods:** This study employed a cross sectional qualitative, human centered research approach to explore how lean manufacturing practices are understood, adopted and experienced. Purposive sampling to select 8 pharmaceutical industries was done. Key informant interviews were conducted among industrial managers to collect data on awareness, tools, barriers and improvement strategies for adoption, using semi-structured interview guide from May to June, and 2025.Thecollected data were transcribed, translated and analysed by deductive thematic analysis approach. **Results:** The study found that most respondents were aware of lean manufacturing principles and their associated tools. They reported adopting and implementing key lean tools such as 5S, Kaizen, Value Stream Mapping, and Just-in-Time systems to improve work organization, production control, and quality assurance of pharmaceutical products. The implementation strategies focused on waste minimization, continuous improvement, and process standardization. However, several barriers emerged under four main themes: organizational culture, resource constraints, regulatory policies, and market-related challenges. **Conclusion and recommendation:** This study has found adequate understanding of lean concepts and tools adopted for lean practices. It has further revealed multi-level barriers from industrial level and public polices at government level. Regular lean training, industrial management commitment in setting budgets for lean are the major multifaceted strategies suggested improving lean implementation.

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201. Kundete, M.R. (2025). Adherence to pre procedural preparations among pediatric patients undergoing anesthesia and sedation outside the operating rooms at Muhimbili National Hospital in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The growing complexity of medical procedures has increased the need for anesthesia and sedation services outside the operating room. In African tertiary hospitals, pediatric procedures that require anesthesia outside the operating room improve access to care but raise concerns about patient readiness and safety. Despite existing guidelines, insufficient preparation remains an issue, which can lead to complications. **Aim:** This study aimed to assess adherence to pre-procedural preparation guidelines for pediatric patients undergoing anesthesia and sedation outside the operating rooms at Muhimbili National Hospital. **Methodology:** A cross-sectional observational study was conducted involving all pediatric patients who received anesthesia and sedation outside the operating room during the study period. Data were analyzed using SPSS version 26. Binary logistic regression identified factors associated with adherence, with adjusted

odds ratios (AOR) and 95% confidence intervals (CI) reported. A p-value of < 0.001), lower caregiver education levels (p = 0.002), the type of procedure (radiological imaging had the lowest adherence, p < 0.001), and the anesthesia technique used (sedation had lower adherence than general anesthesia, p < 0.001). For health care providers and institutional factors, significant predictors of non-adherence were communication barriers between providers and caregivers (p = 0.046), lack of sufficient preparation time (p = 0.045), and the unavailability of necessary pre-procedural equipment and materials (p = 0.038). **Conclusion and Recommendations:** Suboptimal pre-procedural adherence for pediatric anesthesia is influenced by patient age, caregiver education, procedure type, and sedation. Provider factors include communication barriers, time constraints, and equipment availability. Therefore, we emphasize targeted education, improved communication, and better resource allocation to enhance patient safety and care quality.

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202. Kwayu, H.D. (2025). Ultrasound Findings in Adult Patients with Renal Insufficiency and Associated Factors at A Tertiary Care Hospital. Muhimbili University of Health and Allied Sciences

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Abstract

Introduction: Renal insufficiency, characterized by a decline in kidney function, is a major global health issue, especially in resource-limited settings where diagnosis is often delayed. Early detection is critical, and renal ultrasound (US), including Doppler imaging, is a cost-effective, non-invasive tool to assess renal morphology and vascular status. **Objective:** To evaluate renal ultrasound findings and their relationship with renal function and clinical characteristics in adult patients with renal insufficiency at a tertiary care hospital. **Methods:** This cross-sectional study included 113 adult patients with renal insufficiency. Ultrasound parameters assessed included kidney size, cortical thickness, renal volume, and Doppler indices (resistive index [RI] and pulsatility index [PI]). Patients were categorized into reduced (<45 mL/min) and preserved (≥45 mL/min) renal function groups based on estimated glomerular filtration rate (eGFR). Clinical data such as age, comorbidities, and symptoms were recorded. Data analysis involved descriptive statistics for demographic and clinical characteristics, and inferential statistics (chi-square, ANOVA/Kruskal-Wallis, t-tests/Mann-Whitney U, logistic regression) to compare ultrasound findings and identify associations with clinical variables. Data was managed through double-entry, cleaning, and anonymization. Data collection ended in May 2025, with analysis and report writing in June 2025.**Results:** Among 113 participants (mean age: 55.5 ± 12.6 years; range: 35–96), the majority were male (60.2%) and aged 50–59 years (31.0%). Common symptoms included fatigue (38.1%) and facial puffiness (35.4%). Hypertension (58.4%), alcohol use (30.1%), hyperlipidemia (30.1%), diabetes mellitus (29.2%), and a family history of kidney disease (20.4%) were the most prevalent comorbidities. CKD stage 5/ESRD was found in 40.7% of patients. The mean serum xi creatinine level was 549.6 ± 577.1 μmol/L, and the mean eGFR was 28.05 ± 19.32 mL/min/1.73 m². Average systolic and diastolic BP were 132.4 ± 12.5 mmHg and 84.5 ± 7.0 mmHg, respectively; mean BMI was 26.3 ± 3.9 kg/m². Patients with reduced eGFR had significantly smaller kidneys, increased cortical echogenicity (grades 3–4), loss of cortico-medullary differentiation (CMD), and elevated RI and PI (all p < 0.001). Advanced age and lower limb swelling were more frequent among patients with low eGFR (p = 0.031). **Conclusion:** This study

demonstrates that older age, lower limb swelling, smaller kidney size, increased cortical echogenicity, loss of cortico-medullary differentiation, and elevated resistive and pulsatility indices are associated with severe renal insufficiency. No risk factors were found to correlate with chronic kidney disease.

203. Kwikima, S. M. (2025). Assessment of CT patterns among patients with oropharyngeal squamous cell carcinomas at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Oropharyngeal squamous cell carcinoma (OPSCC) is an emerging global malignancy, increasingly linked to HPV, tobacco, and alcohol. In Tanzania, where HPV testing is often unavailable, CT imaging remains a vital tool for diagnosis, staging, and prognosis. HPV-related tumors often show distinct, more favorable CT features compared to tobacco- and alcohol-associated cases. Furthermore, HPV-positive OPSCC is associated with a more favorable prognosis compared to HPV-negative disease, highlighting the clinical importance of recognizing these imaging differences. However, regional data on imaging patterns and their association with risk factors are limited. **Objective:** To evaluate CT imaging features and associated risk factors in OPSCC patients at Muhimbili National Hospital from January 2020 to December 2024. Methodology: This retrospective cross-sectional study analyzed 95 adults with histologically confirmed OPSCC and pretreatment CT scans. Clinical data on demographics and risk exposures (HPV status, tobacco, alcohol) were retrieved from hospital records. Two radiologists independently reviewed CTs for tumor site, margins, enhancement, invasion, and nodal features. STATA 18 was used for statistical analysis. Associations were assessed using chi-square; $p<0.05$ was considered significant. Results: Patients were predominantly male (68.42%) with a mean age of 56.7 years. The base of the tongue was the most affected site (41.05%). Frequent CT features included ill-defined margins (74.74%) and necrotic lymph nodes (84.61%). Only 8.94% had known HPV status. HPV-positive cases (n=4) displayed well-defined, non-necrotic tumors, while tobacco and alcohol use correlated with infiltrative, necrotic patterns ($p<0.05$). **Conclusion:** CT patterns of Tanzanian OPSCC patients vary with exposure history. HPV-positive tumors tend to exhibit more favorable imaging features, whereas necrotic lymph nodes, ill-defined margins, and heterogeneous enhancement were more common among patients with a history of cigarette smoking and alcohol use—risk factors strongly associated with HPV-negative OPSCC in previous studies. These findings suggest that, in resource-limited settings, the association between risk factors and CT patterns may help predict HPV status and guide patient triage for definitive HPV-based management. **Recommendation:** CT should be strategically used to classify OPSCC features, especially where HPV testing is limited. Future prospective studies with confirmed HPV status are needed to refine CT-based risk models and guide personalized care in low-resource settings. **Keywords:** OPSCC, CT imaging, HPV, Tanzania, radiologic patterns, risk factors

204. Kyando, R.D. (2025). Nurses' Knowledge, Confidence and Factors Associated with Management of Sepsis at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sepsis remains a significant public health dilemma, particularly in Tanzania, with a prevalence of 6.6%, contributing to high morbidity rates and mortality rates. Despite the fact that, nurses in general wards play a critical role in early sepsis detection and management, yet their level of knowledge and confidence in sepsis management has not been adequately assessed, which necessitated the conduction of this study. **Aim of the study:** The aim of this study was to assess knowledge, confidence and factors associated with the management of sepsis among nurses in general wards at Muhimbili National Hospital, Dar es Salaam, Tanzania. **Methodology:** This study employed an analytical cross-sectional study that was conducted at MNH among general ward nurses, with a sample size of 320 nurses selected using a multi-phase sampling technique. Data collection involved the use of a structured - closed-ended survey. Data analysis was performed using IBM SPSS version 22, where by descriptive statistics summarized demographic characteristics, and multivariate logistic regression was used to identify the factors associated with sepsis management while controlling for potential confounders. Moreover, odds ratios (crude and adjusted) with 95% confidence intervals were calculated. **Findings:** The study found that nurses in the general ward at MNH had a relatively high level of knowledge in sepsis management, with a mean score of 75.34%. Their level of confidence in managing sepsis was also high (84.07%). Univariate and multivariate logistic regression analyses showed that age and education level were significantly associated with sepsis management. Nurses aged 40–49 years were more likely to manage sepsis effectively than those aged 20–29 years (AOR = 4.551, 95% CI = 1.160–17.855, P = 0.030). Similarly, nurses with a bachelor's degree were more likely to manage sepsis effectively than those with a diploma (AOR = 1.434, 95% CI = 0.167–1.171, P = 0.050). **Conclusion and Recommendations:** The study found that nurses at MNH have high knowledge and confidence in managing sepsis, with age and education level significantly influencing their performance. Healthcare professionals should pursue regular training, the government should support standardized protocols and training, and researchers should explore more factors to improve sepsis management.

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205. Kyando, R.N. (2025). Determinants of microbiological quality in potable water onboard domestic ships docking at Dar es salaam Seaport. Muhimbili university of health and Allied Science.

Abstract

Background: Clean and safe drinking water is essential for human health, particularly on ships th at are self-contained and may spend days at sea. Poor microbiological water quality can cause diseases such as cholera, diarrhea, and typhoid. Contamination may occur during loading from port or vendor sources. However, limited data exist on the microbiological quality of potable water on domestic ships docking at Dar es Salaam Port, Tanzania. Objective: To determine the microbiological quality of potable water and its determinants onboard domestic ships docking at Dar es Salaam Port. **Methodology:** A descriptive cross-sectional study was conducted using water samples collected from domestic ships. Sterile 50 ml bottles were used to collect samples from various onboard points. The Most Probable Number (MPN) method was applied to quantify Total coliforms and E. coli. Frequencies and percentages described contamination levels, while

univariable and multivariable modified Poisson regression models accounting for ship clustering assessed associations between water quality and ship level factors. Statistical significance was set at $p \leq 0.05$ with 95% confidence intervals (CI). **Results:** Ninety-nine water samples from 33 ships were analyzed. Of these, 63% (61 samples) contained detectable Total coliforms (≥1 CFU/100 ml) and 33% (32) tested positive for E. coli. Twenty-one ships (63%) had at least one contaminated sample. Univariable analysis showed that less frequent cleaning of storage tanks (≤2 times/year) was linked to higher contamination (PR = 1.48; 95% CI: 1.01 2.17; p = 0.045), and voyage durations ≤8 hours were a associated with greater contamination (PR = 1.70; 95% CI: 1.05 2.76; p = 0.030). However, no ship level characteristics, including vessel age, remained significant in the multivariable model. **Conclusion:** Potable water on domestic ships docking at Dar es Sal aam Port showed poor microbiological quality, with widespread contamination by Total coliforms and E. coli. No significant association was found between ship age, hygiene practices, and contamination, indicating other factors may be more influential.

206. Laizer, E.T. (2025). Prevalence and Factors Associated with Psychological Distress Among First-Year Students at The Institute of Social Work in Dar es Salaam, Tanzania. Muhimbili University of Health and allied sciences.

Abstract

Background: Psychological distress among university students is a growing concern globally with students reporting high dropout rates affecting individuals' personal growth, family and nation at large. First-year students are a group of people adjusting to new academic duties, independence, and unfamiliar social settings which put them at high risk of experiencing psychological distress. Psychological distress refers to emotional suffering that includes physical and mental symptoms such as restlessness, insomnia, fatigue, sadness, and unjustified absence from duties. **Objective:** This study aimed at determining the prevalence of psychological distress and associated factors among first-year students at the Institute of Social Work in Dar es Salaam, Tanzania. **Methodology:** This study was a cross-sectional, institution-based and used quantitative methods that involved 358 first-year students registered at the Institute of Social Work, in Kinondoni, Dar es Salaam. Students were stratified according to academic departments, then these were randomly selected with a proportionate representation. Data were collected using a structured socio-demographic questionnaire, Kessler 10 is used to assess psychological distress, and the Oslo Social Support Scale to assess social support. Data were analyzed using Stata Corp software version 15.0, with categorical variables presented as frequencies and continuous variables reported as medians. Modified Poisson logistic regression was performed to determine associations between independent variables and psychological distress. All variables linked to psychological distress with a p-value of less than or equal to 0.2 in the bivariate analysis were further analyzed using multivariate logistic regression. Variables with a p-value less than or equal to 0.05 were considered statistically significant. Ethical clearance was granted by the Institutional Review Board (IRB) at MUHAS, permission to access students was granted by the Principal of the ISW-Dar es Salaam campus, and only students who provided written informed consent were included. **Results:** Three hundred and fifty-eight consented and registered first-year students (210 female, 148 male) were interviewed with 100% participation. The participants' median age was 23.5 (IQR= 21.0-26.0).

Half of the participants 50.3% (n=180) reported PD. Male students were more likely to report experiencing PD compared to their female counterparts (24%, aPR=1.24; CI:1.01-1.52, *p*-value=0.039). One third of the students who perceived there were inadequate spaces for studying by (33%, aPR = 1.33, 95% CI= 1.01-1.74, *p*-value=0.039) were more likely to screen positive for PD compared to those who perceived having enough space for studying. Moreover, students with positive family history of mental illness had a 49% increased prevalence of reporting psychological distress (aPR = 1.49, 95% CI= 1.16-1.9, *p*-value=0.002) as compared to those without a family history of mental illness. Additionally, students who reported lower social support have a 46% higher prevalence of psychological distress (aPR =1.46, 95% CI = 1.16-1.83, *p*-value=0.001) compared to those with moderate social support. **Conclusion:** Psychological distress is common among first-year students at the Institute of Social Work (ISW). Male participants, students perceiving inadequacy of study spaces, students with a positive family history of mental illness, and those reporting low levels of social support, were more likely to experience psychological distress.

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207. Lameck, C.R. (2025). Assessment of medicines accessibility for NCD patients covered by National Health Insurance Fund (NHIF) attending Public and Private hospitals in Mwanza region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: NCDs have become a major public health challenge globally, and Tanzania is no exception, where the burden of diseases such as hypertension, diabetes, and cancer continues to rise. NHIF is a key component of Tanzania's strategy towards achieving UHC. The NHIF aims to ensure equitable access to healthcare services, but concerns remain about the accessibility of essential medicines for patients with NCDs in both private and public healthcare settings, as these patients are at greater risk. Recent changes in the NHIF reimbursement package in Tanzania have raised concerns about pricing inconsistencies and their impact on access to essential medicines, particularly for patients with NCDs. The price disparities between NHIF reimbursement prices and market prices may contribute to medicine stock-outs at health facilities and hence compromise medicine accessibility to patients Objectives: To assess the accessibility of medicines for NHIF patients with NCDs attending public and private hospitals in Mwanza region, Tanzania. **Methodology:** This study employed a cross-sectional quantitative design to assess the impact of the new NHIF benefit package on the accessibility of essential medicines for patients with NCDs. Data were collected from two hospitals, public and private hospital over a two-year period. The study population consisted of NHIF patients with NCDs who received prescriptions during the study period. Prescription fill rates were used as the primary indicator of medicine accessibility. To complement the secondary data, follow-up phone interviews were conducted to capture information on alternative sources of medicines and their prices at private pharmacies. A mixed sampling approach was used: census sampling was applied at the private hospital where all records were available electronically, while a combination of random, convenient sampling, and census approach was used at the public hospital. Data collection tools included prescription review checklists and structured questionnaires for patient follow-up. Quantitative data were analyzed using comparative and descriptive statistics to evaluate changes in prescription fulfillment,

identify trends in stock-outs, and compare retail pharmacy prices with NHIF reimbursement prices. xii **Results:** The introduction of a new NHIF benefit package which started at 1st Mach 2024, led to a modest but meaningful decline in NCD medicines accessibility to NHIF patients, with public hospitals experiencing a slightly drop in prescription fill rates, from 98.6% to 95.6% compared to private facilities, which declined from 98.4% to 97.1%. In response to medicine stock-outs, 96% of patients turned to private pharmacies, while 4%–6% took no further action, highlighting access gaps. Price comparisons revealed that 85% of essential NCD medicines were more expensive at private pharmacies than the NHIF reimbursement rates, with price differences exceeding 70% in some cases. However, 15% of medicines were cheaper in the retail market, pointing to inconsistencies in the NHIF reimbursement prices preparation. **Conclusion and Recommendations:** The study assessed medicine accessibility for NHIF patients with NCDs after recent NHIF benefit package reforms. It found a noticeable decline in medicine availability in public and private hospitals, pushing patients to rely on private pharmacies or forgo treatment after out of stock. There are some price disparities between market prices and NHIF reimbursement rates. The study recommends revising NHIF reimbursement policies, improving facility coordination, reinstating referral forms(form 2C) for private pharmacy access, strengthening supply chains, and conducting further research on medicine shortages causes and its treatment outcomes, and public-private partnerships in pharmaceutical supply chain

208. Laurianne, S. (2025). Prevalence and factors associated with anxiety symptoms among undergraduate students at Muhimbili University of Health and Allied Sciences.

Abstract

Background: Anxiety, while as common and potentially as disabling as depression, has received comparatively less attention and is frequently overlooked and inadequately treated in the general population. Anxiety among university students deserves more focus, given its profound implications. Anxiety symptoms can disrupt essential cognitive functions such as goal-directed attention, concentration, working memory, and perceptual-motor skills. These abilities are crucial for students to maintain a good quality of life, particularly at the beginning of their professional careers. **Objectives:** The study sought to determine the prevalence of anxiety symptoms and explore the associated factors among undergraduates studying at Muhimbili University of Health and Allied Sciences (MUHAS). **Methods:** An institution-based cross-sectional analytical study of a quantitative nature employing a random stratified sampling technique was conducted. The data was collected from January to February 2025 using a self-administered semi-structured questionnaire. Generalised Anxiety Disorder (GAD7), General Self Efficacy (GSE), and Oslo Social Support (OSSS-3) were used to collect data. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 27, and the results with continuous data were summarized using mean and standard deviation. Bivariate analysis was done, and then multivariable logistic regression was done on variables with a p-value <0.2 in bivariate analysis to assess the association between independent and dependent variables. Statistical significance was considered to be at a p-value<0.05. Ethical clearance was sought from the MUHAS Senate Research and Publications Committee and the Director of Undergraduate Studies. Participants consented first before responding to the questionnaire. **Results:** This study had 567 participants (365 males, 202

females); the mean age was 22.99 years, with a 2.393 standard deviation. About one in two, 52.4%, had anxiety symptoms, where 33.5%, 18.9% had mild, moderate to severe anxiety symptoms, respectively. Factors independently associated with anxiety symptoms included dissatisfaction with academic performance (AOR = 2.494,95% CI;(1.501,4.143) p<0.001) and perceived poor social support (AOR = 1.731,95% CI;(1.102, 2.721) p<0.017).

209. Lecasio, E.G. (2025). Factors Influencing Non-Renewal of Improved Community Health Fund (iCHF) Scheme in Kisarawe District. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Community-Based Health Insurance (CBHI) schemes, such as the improved Community Health Fund (iCHF), are pivotal in enhancing healthcare access in rural Tanzania. However, non-renewal of iCHF schemes remains a significant challenge, undermining their effectiveness and sustainability. Limited understanding of the socio-economic and healthcare system factors contributing to these issues hinders the development of targeted interventions. **Main Objective:** This study aims to determine the factors influencing the non-renewal of iCHF schemes in Kisarawe District. **Methodology:** An analytical cross-sectional study using both quantitative and qualitative approaches was conducted, targeting individuals enrolled in iCHF over the past two years. Data was collected from heads of households through subjecting them to structured surveys to determine retention rates and their determinants. Data was analysed using statistical software (SPSS v.31), where Data analysis involved both descriptive and inferential statistical methods. Retention rate was summarized using descriptive statistics, including frequencies, percentages, means, and standard deviations. The association between socioeconomic factors and retention was examined using chi-square tests, and binary logistic regression, which identified significant predictors. Qualitative data from interviews underwent thematic analysis using NVivo to extract key insights on perceptions and experiences related to iCHF retention. **Results:** The study revealed that more than 50% of households enrolled in the improved Community Health Fund (iCHF) in Kisarawe District did not renew their membership. While socio-demographic factors showed no significant impact on renewal, lack of awareness about iCHF benefits was linked to higher dropout rates. Crucially, health system related factors played a significant role; households located more than 5 kilometers from health facilities, those experiencing unavailability of essential drugs and services, negative healthcare provider attitudes, and long waiting times were significantly more likely to discontinue their membership. **Conclusion and recommendations:** Non-renewal of iCHF membership in Kisarawe District is mainly influenced by health system factors, particularly poor accessibility to healthcare facilities, unavailability of essential drugs and services, negative attitudes of healthcare providers, and long waiting times. Sociodemographic and economic factors had no influence on the renewal of iCHF. To improve retention, it is recommended that enhancing healthcare service quality be enhanced through consistent drug supply, improve healthcare providers' attitude, and reducing waiting times. Also, it is important to expand access to remote households and strengthen community awareness and education on the benefits of iCHF. These efforts are essential to build trust, improve user experience, and contribute to achieving Universal Health Coverage.

210. Leonard, A. U. (2025). Prevalence of iron deficiency anemia and associated factors among infants less than six months attending reproductive and child health clinic at Mbeya zonal referral hospital, Tanzania. Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Iron deficiency anemia (IDA) among infants under six months is a neglected area in public health, with limited data available despite high anemia prevalence in Tanzania. This study provides evidence on the magnitude and key associated factors of IDA in this vulnerable age group. **Objective:** To determine the prevalence and associated factors of iron deficiency anemia among infants under six months attending the Reproductive and Child Health (RCH) clinic at Mbeya Zonal Referral Hospital (MZRH), Tanzania. **Methods:** A hospital-based cross-sectional study was conducted involving 391 infants under six months. Data were collected using structured interviews, anthropometric measurements, and laboratory tests for hemoglobin and serum ferritin levels. Statistical analysis was performed using descriptive and inferential methods. **Results:** The prevalence of iron deficiency anemia was 7.6% (19/250), iron deficiency disease 11.1% (30/270), and overall anemia 53.3% (187/351). IDA was more common among infants aged 16 weeks and above (26.3%), males (12.1%), and those born preterm (16.7%). Exclusive breastfeeding was associated with lower IDA prevalence (6.2%) compared to other feeding types (20.0%). Although maternal factors were not statistically significant. **Conclusion:** Anemia among infants under six months is highly prevalent at MZRH, though only a small proportion is due to iron deficiency. Early screening, targeted supplementation, and caregiver education are recommended to address this burden. Further studies are needed to explore other causes of anemia in this age group.

211. Leonard, P. (2025). Cultural adaptation of kiddie schedule for affective disorders and schizophrenia diagnostic tool for autism spectrum disorders in children at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by impairments in social interaction, communication difficulties, and the presence of restricted, repetitive patterns of behaviour, interests, or activities. Globally, the estimated prevalence of ASD is approximately 1%. In Africa, reported rates range from 0.68% to 2.3%. However, no published data existed on the prevalence of ASD in Tanzania. Early diagnosis and intervention are crucial for improving outcomes, yet Tanzania lacked systematically adapted diagnostic tools for ASD. At the MNH-CAP-C, due to lack of a culturally adapted assessment tool there had been misdiagnoses, missed diagnoses, and variability in clinical decisions. The K-SADS-PL is a semi-structured diagnostic interview tool that has been widely used internationally for assessing psychiatric disorders in children and adolescents and includes modules for ASD. The tool may be administered by a clinician or be self-administered (by parents or children and allows for indepth exploration of symptoms in alignment with DSM-5 criteria. The ASD module had not been adapted for use in Tanzania, limiting its effectiveness. This study aimed to translate and culturally adapt the KSADS ASD module for use in Tanzanian clinical settings. The adaptation process sought to improve

diagnostic accuracy, enhance cultural sensitivity, and facilitate early identification and intervention. **Objective:** This study aimed to conduct a cultural adaptation of the KSADS ASD diagnostic tool. Methods: This methodological study followed Beaton's Guidelines for Cross-Cultural Adaptation. The study involved 25 participants obtained through purposive and convenient sampling approach. We obtained and analysed data on the process of adaptation from translation to piloting of the adapted tool. Ethical issues: The study obtained its ethical clearance from the Muhimbili University of Health and Allied Sciences Ethical Review Board and the study permit from Muhimbili National Hospital Research, Consultancy, and Research Unit. Results and Discussion: We obtained a Swahili version of the K-SADS ASD diagnostic supplement through a systematic translation and cultural adaptation process, following Beaton's guidelines. From the model, we obtained four key deductive themes: semantic, idiomatic, conceptual, and experiential. Cognitive interviews and expert feedback were instrumental in refining the tool, confirming its comprehensibility and cultural appropriateness. The study underscores the importance of grounding psychiatric tools not only in linguistic equivalence but also in cultural and developmental relevance. The resulting Swahili version offers a contextually meaningful and diagnostically faithful instrument for use in Tanzanian child and adolescent mental health settings. Budget: The study budget was obtained from the Ministry of Health as a grantee for the Master of Medicine program

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212. Lightness, S. (2025). Prevalence, Outcomes and Associated Factors Among Traumatic Spinal Cord Injury Patients Admitted at Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Traumatic spinal cord injury involves a myriad of body systemic dysfunctions, most of which can be fatal. Rigorous resuscitation and management of these complications is crucial to prevent secondary injury and death. The burden of outcomes and factors associated with those outcomes in the ICU following spinal trauma is yet unclear. **Aim of the study**: This study aimed to assess prevalence, outcome and factors associated with outcomes among traumatic spinal cord injury patients admitted in the critical care unit at MOI. **Methodology:** This was a hospital-based prospective cohort study involving 61 patients admitted to a tertiary referral hospital in Tanzania. Data was collected using a modified checklist from a similar study by Gong Y. et al. The Statistical Package for Social Science (SPSS) version 26 was used to clean and analyse the collected data. The ICU prevalence of TSCI was calculated from the total number of patients admitted to the ICU during the study period. Chi-square test measure of association was used to determine the statistical significance between dependent and independent variables. A p-value of <0.05 was considered as the threshold for establishing statistical significance. Kaplan-Meier survival analysis was done to assess the overall survival among TSCI patients. For comparison between the mortality groups, log-rank cox regression test was done. Results: The prevalence of TSCI among ICU-admitted patients was 7%. Common mechanisms of injury among the victims were road traffic accidents and falls. There were more male than female victims. Median age at injury was 35 years. ICU mortality in TSCI patients was 39.2%. Need for vasopressors and mechanical ventilation were found to increase likelihood of mortality. **Conclusion:** Majority of TSCI patients

survive ICU admission. However, requirement of inotrope and mechanical ventilation contributed to mortality. The limitations of the study should be taken into consideration when deciphering the results, although they do support further research on TSCI outcomes. **Recommendations:** Continued adherence to current trauma protocols as these improve survival. Community education on impacts and handling of trauma should be encouraged.

213. Londezya, S. (2025). Perceived Experiences of Care Among Women Who Undergo Caesarean Deliveries at Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The caesarean section rate has risen globally and in Tanzania, reaching 11% nationally and 63.6% at Muhimbili National Hospital in 2023. While guidelines emphasize professional support and effective communication, many women still face negative care experiences. Existing research often centres on pain, yet broader aspects of women's experiences remain underexplored. Understanding these is crucial for improving caesarean care. Aim of the study: To explore the experiences of care of women who underwent caesarean section deliveries at Muhimbili National Hospital. Materials and **Methods:** A descriptive phenomenological study design was used to explore the care experiences of women who underwent caesarean deliveries at Muhimbili National Hospital. The study was conducted from October to November 2024. A purposive sampling technique was employed to recruit participants who met the inclusion criteria. Informed consent was obtained from all participants. In-depth interviews were conducted with 13 participants, after data saturation was reached using the interview guide. Thematic analysis, as described by Braun and Clarke, was used to analyse the data. **Findings:** This study found that women who underwent caesarean deliveries at Muhimbili National Hospital had positive experiences in the areas of pain management, physical support, and privacy, while negative experiences involved limited involvement in decision-making, lack of emotional support, and poor communication. These findings are reflected in three key themes: challenges faced by women who undergo caesarean deliveries, the supportive role played by healthcare providers to women, and women's experiences of respectful care from healthcare providers. **Conclusion and recommendations:** The care experiences of women undergoing caesarean deliveries at Muhimbili National Hospital are mixed, encompassing both positive and negative experiences. Strengthening support and communication will enhance women’s care experiences. Establishment of a robust patient feedback system, and policy revision are essential for improving the care experience.

214. Lucas, K. (2025). Hemodialysis Treatment Adherence and Associated Factors Among Patients with End-Stage Kidney Disease at Mbeya City Council. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Treatment adherence is crucial for managing end-stage kidney disease in hemodialysis (HD) patients, including attendance at sessions, medication use, and dietary compliance. Poor adherence can lead to complications such as fluid overload and increased

mortality, whereas improved adherence improves outcomes and reduces hospitalizations. However, there is a scarcity of evidence on adherence levels and influencing factors among HD patients. **Aim:** To determine the prevalence of hemodialysis treatment adherence and what factors are associated with adherence to treatment among patients with end-stage kidney disease at the Mbeya City Council **Methods:** A cross-sectional study was conducted involving 74 patients receiving maintenance HD in three HD centers: UWATA, MZRH, and Afya Check in the Mbeya city council. Data were collected using structured questionnaires determining adherence across four domains: HD attendance, medication, diet, and fluid restriction. A bivariate binary logistic regression analysis was used to identify factors independently associated with adherence, where variables with a p value of < 0.2 were identified, and a multivariate binary regression analysis was done and those variables with a p-value of < 0.05 were considered statistically significantly associated with HD treatment adherence. **Results:** This study included 74 participants with the overall prevalence of good adherence to HD treatment of 79.7%. About 65(87.8%) participants adhered to medication, 57(77%) to dietary practices, and 39(52.7%) adhered to fluid restriction and 55(74.3%) had good HD attendance. The multivariate regression analysis revealed that patients aged below 45 years were significantly associated with poor adherence compared to other age groups, with an aOR of 0.286 (95% CI: 0.206-2.315, p-value 0.036). Additionally, having a single comorbidity was strongly associated with good adherence as patients with a single comorbidity had reduced odds of good compliance, with an aOR of 0.02 (95% CI: 0.001–0.573, p-value = 0.022). The presence of family support significantly enhanced adherence, as patients with family support had reduced odds of poor adherence with an AOR of 0.006 (95% CI: 0.000–0.150, p-value = 0.002). **Conclusion:** Although adherence to HD treatment was generally high 79.7%, younger age, multiple comorbidities, and lack of family support were associated with poor adherence. These findings underscore the importance of developing targeted, patient-centered interventions that address the challenges of comorbidity, promote family involvement, and provide tailored support for younger patients to enhance adherence and improve long-term treatment outcomes.

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215. Luge, I.M. (2025). Nurses' knowledge, attitude, and practices on sedation for critically ill patients in the intensive care units at tertiary hospitals in Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The majority of critically ill patients admitted to the Intensive Care Unit (ICU) are sedated during their stay due to agitation, pain, stress, anxiety, and other factors. However, sedation has been linked with various complications. Alleviation of these complications requires nurses to be the primary stakeholders in ensuring the safe administration of sedatives through the proper use of sedative agitation scales. Inadequate studies have been conducted in Tanzania to assess nurses' Knowledge, attitudes, and practices in sedation among critically ill patients. **Objective:** This study aims to assess ICU nurses' knowledge, attitudes, and practices about sedation for critically ill patients. **Methodology:** A cross-sectional study involving 163 nurses at Muhimbili National Hospital, Muhimbili Orthopaedics Institute, and Jakaya Kikwete Cardiac Institute was conducted. Data were collected using structured questionnaires and checklists and

analysed using SPSS version 25. The variables with $p \leq 0.2$ in the bivariate regression were considered for the multivariate regression model, and variables with $p < 0.05$ at a 95% confidence interval were considered statistically significant. **Results*:*** The study achieved a 100% response rate, with all 163 participants successfully enrolled. The findings highlight that more than half, 68.1% (111), had adequate knowledge of sedation. After adjusting for all factors, gender remained significantly associated with sedation knowledge (AOR = 0.377, 95% CI: 0.181-0.787, p = 0.009). The majority of respondents were female, 60.7% (99), with a mean age of 34.6 years and a standard deviation (SD) of ±6.48 years. Meanwhile, 76.7% expressed unfavorable attitudes toward sedation. Training for sedation significantly influenced attitudes (AOR = 2.553, 95% CI: 1.015–6.422, p = 0.046) after adjustment. The study revealed that 81.6% (133) of participants had poor adherence to sedation practices. Age significantly influenced sedation practices (AOR = 0.344, 95% CI: 0.129–0.912, p = 0.032). The majority of respondents aged 25–35 demonstrated good adherence of sedation practices. **Conclusion and Recommendation:** The study revealed that a significant number of nurses had adequate knowledge, negative attitudes, and poor adherence practices towards sedation for critically ill patients. Nurses should routinely participate in training, seminars, and workshops related to sedation practice to enhance proper treatments and lower patient complications.

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216. Lugongo, J.A. (2025). Diagnostic delay and associated factors among tuberculosis patients attending TB clinics in health facilities in Dar es Salaam Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Tuberculosis (TB) continues to be a major global cause of mortality, with 10.8 million new cases and 1.25 million deaths recorded in 2023, including 161,000 deaths among people living with HIV. Tanzania is one of the 30 countries with a high TB/HIV burden, reporting a TB incidence of 183 per 100,000 people and 18,400 deaths in 2023.The WHO emphasizes early diagnosis, including universal drug-susceptibility testing, systematic screening of contacts and high-risk groups, and comprehensive treatment as key strategies in tuberculosis control. To support these efforts, a national TB guideline has been developed to guide health professionals in implementing these strategies at the national level, aiming to identify TB cases earlier, reduce transmission, and minimize morbidity, mortality, and financial impact. Timely diagnosis and prompt initiation of treatment are crucial for controlling TB, enhancing patient outcomes, and minimizing disease transmission. **Broad research objective:** To assess the factors associated with diagnostic delay among tuberculosis patients in health facilities in Dar es Salaam. **Methodology:** A cross-sectional study was conducted in health facilities in the Dar es Salaam region, Tanzania. Quantitative data were collected from TB patients aged 18 years and above attending TB OR TB/HIV clinics using a structured questionnaire to guide patient interviews. Participants receiving treatment at the clinics were selected through systematic random sampling. Data were analyzed using Stata version 17. Descriptive statistics were used to summarize participant characteristics and health care delivery factors. Time to diagnosis was categorized as delayed (>21 days) or not delayed (≤21 days). Bivariate association between independent variable and diagnostic time were assessed using Chi-square test and variables with $p<0.25$ or clinical relevance were included in

modified Poisson regression model with robust variance to estimate adjusted prevalence ratios (aPR) with 95% confidence intervals. A p-value <0.05 was considered statistically significant. **Results:** Out of the 354 participants, 240 (67.9%) experienced diagnostic delays beyond the recommended 21 days. The median time to diagnosis was 29 days (IQR: 15–46). Participants with primary education (aPR = 0.70, 95% CI: 0.68–0.71), secondary education (aPR = 0.77, 95% CI: 0.76–0.79), and college/university education (aPR = 0.80, 95% CI: 0.73–0.88) were significantly less likely to delay diagnosis compared to those with no formal education. Widowed or divorced individuals were more likely to experience delay (aPR = 1.10, 95% CI: 1.04–1.15) and those who engaged in self-treatment before seeking care (aPR = 1.30, 95% CI: 1.28–1.31). On the health system delivery factors, participants who visited more than one health facility (aPR = 1.27, 95% CI: 1.15–1.40) or were not referred from another facility (aPR = 1.13, 95% CI: 1.11–1.16) were more likely to experience diagnostic delays. Loss of income due to time spent seeking care was also a significant factor for diagnostic delay (aPR = 1.44, 95% CI: 1.22–1.71). **Conclusion and recommendations:** The study reveals that delays in TB diagnosis are influenced by both patient-related and healthcare system factors. Strengthening community awareness about TB symptoms and the risks of self-treatment, along with improving access to diagnostic services, is essential. These findings underscore the need for targeted interventions to reduce diagnostic delays and support national TB control efforts.

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217. Lusubilo, W. (2025). Prevalence, clinical characteristics, and factors associated with uremic pruritis among patients undergoing hemodialysis treatments in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Uremic pruritus (UP) is a common and frequently reported condition among End-Stage Kidney Disease (ESKD) patients undergoing hemodialysis (HD). This condition profoundly impacts patients' Quality of Life (QOL). Understanding the burden of uremic pruritus is substantial for improving patient care and developing effective interventions to enhance the overall well-being of HD patients. **Aim:** This study aims to determine the prevalence, clinical characteristics, and factors associated with uremic pruritus among patients undergoing hemodialysis treatments in Dar es Salaam, Tanzania. **Material and methods:** A cross-sectional analytical hospital-based study was conducted among 349 HD patients across five hospitals in Dar es Salaam, MNH Upanga, Mloganzila**,** Amana, Temeke, and Mwananyamala. Data were collected using a structured questionnaire, including the 5D-pruritus scale, and laboratory values were obtained from patient records. Modified poison regression analyses were performed to identify independent predictors of UP, and a p-value of 0.05 was considered statistically significant. **Results**: The study involved 349 out of 382 participants, nearly half were aged 45–65 years, 47.0%, with a mean age (SD) of 49.87±13.72 years. Males comprised 63.3%. About one-third had secondary education, 36.1%, most were unemployed, 80.8%, and 61.9% lived with a partner. The majority were urban dwellers, 89.1%. The prevalence of UP was 35.5%. Most patients experienced mild pruritus, 54.8%, lasting less than 6 hours daily, 55.6%, commonly affecting the back, 96.7%, and scalp, 82.9%. Over half, 53.2%, reported sleep disturbance due to itching. The modified Poisson regression analysis identified a higher prevalence of UP among patients with multiple comorbidities, who had a 16.8%

increased risk compared to those with a single condition (APR 0.832, p = 0.001). Elevated phosphorus levels (≥1.49 mmol/L) were associated with a 10.9% higher prevalence of UP (APR = 1.109, p = 0.005. In terms of potassium levels, patients with hyperkalemia (≥5.5 mmol/L) showed a 9.4% higher prevalence of UP (APR = 1.094, p = 0.016), while those with hypokalemia (<3.5 mmol/L) had a 20.5% lower prevalence (APR = 0.795, p = 0.001). Furthermore, Anemia (Hb <10 g/dL) was also a significant predictor, with patients showing an 8.7% higher prevalence of UP (APR = 1.087, p = 0.011). Additionally, low calcium levels (<2.1 mmol/L) were linked to an 8.2% increase in UP prevalence (APR = 1.082, p = 0.013). Patients with insurance coverage had a significantly lower prevalence of UP by 8.7% compared to those who paid cash (APR = 0.913, p = 0.002). **Conclusion:** This study found that uremic pruritus affects over one-third (35.5%) of HD patients in Dar es Salaam, mostly presenting as mild itching, primarily on the back, and negatively impacting sleep. The condition was associated with multiple comorbidities and metabolic imbalances, including hyperphosphatemia, hyperkalemia, anemia, and low calcium, while patients with health insurance experienced a lower prevalence.

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218. Luvanda, E.E. (2025). Perceived Barriers to Use Stroke Management Services Among Stroke Survivors at Muhimbili National Hospital, Mloganzila, Dar es Salaam, Tanzania. A Qualitative Explorative Study, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Post-stroke care is vital globally, as many survivors face lasting disabilities needing ongoing management and rehabilitation. Utilization of post-stroke care services remains low as many survivors discontinue treatment after initial hospital care. This emphasizes the need to identify and address barriers to post-stroke care to improve survivors' long-term quality of life. **Aim of the study:** The study aims to explore the perceived barriers to use stroke management services among stroke survivors at MNH-Mloganzila, Dar es Salaam, Tanzania. **Methods:** An exploratory qualitative approach was employed to guide data collection for this study. The research was conducted at Muhimbili National Hospital – Mloganzila and involved stroke survivors who had received post-stroke care at the facility. 20 Participants were purposively selected based on their ability to provide rich and relevant insights into the barriers associated with the use of post-stroke care. **Results:** Three main themes emerged from the analysis regarding barriers to stroke management services among stroke survivors. Individual barriers included psychological distress due to financial strain, such as hopelessness from inability to afford recommended diets, emotional pain after loss of insurance, and negative attitudes toward rehabilitation or preference for traditional medicine. Interpersonal barriers involved communication challenges with healthcare providers, especially a lack of direct contact during emergencies, as well as family dynamics like financial struggles, lack of encouragement, and disagreement over treatment. Lastly, organizational barriers were linked to limitations of health insurance, long waiting times, overcrowded services, and disrupted continuity of care due to frequent changes in medical personnel. **Conclusion:** The study highlights the need to address financial, systemic, and interpersonal barriers to stroke care in Tanzania through improved insurance coverage, streamlined hospital services, continuity of care, and better patient-provider communication. Recommendations: Policymakers should subsidize treatment costs and expand insurance to cover

rehabilitation services. Hospitals must reduce delays, upgrade systems, and minimize doctor rotations. Dedicated helplines and community-based support programs should also be implemented to enhance long-term recovery for stroke survivors.

219. Lyimo, H.I. (2025). Adequacy of surgical operation notes documentation at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Operation notes documentation plays an important role in ensuring a proper continuum of care to the patients post-operatively. Well-documented operative notes serve a role in academic purposes, auditing, and medico legal litigation purposes. In our setting, published data are absent regarding the extent at which the surgical operation notes are adequately documented in terms of completeness of the highlighted components in the operation template. Therefore, there is a significant knowledge gap in the level of adequacy of the surgical operation notes in our facility. **Aim:** The primary objective of this study was to assess adequacy of operation notes documentation at Muhimbili National Hospital in Dar es Salaam. **Methods:** A hospital based cross-sectional descriptive study was conducted at Muhimbili National Hospital in Dar es Salaam, enrolling data from documented operation forms of surgeries conducted in six surgical units from November, 2024 to February, 2025. Data on completeness of the components of these forms were evaluated. Moreover, data on the factors affecting completeness of surgical operation notes documentation based on the surgical doctors' perception were also collected via structured questionnaires. Descriptive statistics were used to analyze data using SPSS version 23. The level of completeness was considered good if the compliance was > 90% and poor if it's < 90%in documentation of all the required components in the form. Ethical approval was sought from IRB at MUHAS and approval for data collection was sought from MNH. **Results:** This study recruited 259 surgical operation notes forms from six surgical units based on the inclusion criteria. The proportion of the files recruited were; general surgery 16.6% (n=43), pediatric surgery13.9% (n=36), plastic and reconstructive 12.7% (n=33), urology 17.4% (n=45), otorhinolaryngology 20.1% (n=52) and obstetrics and gynecology 19.3% (n=50). Of 259 recruited forms, 68.7% (n=178) were completely filled in all the required components of the surgical operation form. Among the 10 components of the forms, 5 were completely filled in all the forms and these were date, signature, postoperative instructions, operative findings and name of the procedure. The least filled component was incision 77.6% (n=201). The surgical department with the highest proportional of completely filled forms was plastic and reconstructive unit, 83.3%, the overall level of completeness was 96.04%. Of 139 surgical doctors enrolled, 66.2% (n=92) were aged more than 35 years and the median age was 34, IQR (32, 38). Majority of the study participants were male 80.6% (n= 112). Majority of the participants were from ENT department 20.1% (n=28), 64% (n=89) of the study participants were residents. The factors that were highlighted by respondents were formal training, level of education, insufficient operation template, supervision, experience and awareness to other standard surgical operation guidelines. **Conclusion:** Overall, the level of completeness of surgical operation notes documentation is good in most of the components highlighted in our operation form with poor compliance in the documentation of name of surgeon and nature of incision made during surgical procedure noted. Among the factors that were highlighted by the surgical doctors in

the interview as affecting adequacy of operation notes documentation included formal training, level of education, supervision, insufficient template, experience and awareness to standard surgical notes documentation guidelines. ***Keywords;*** *Operation notes, Adequacy of operation notes documentation.*

220. Mabena, K. (2025). Compliance with Nutritional Assessment Practices and Institutional Determinants Among People Living with HIV in Care and Treatment Clinics in Dar Es Salaam Region, Muhimbili University of Health and Allied Sciences.

Abstract

Background: To manage the nutritional needs of PLHIV effectively, healthcare providers rely on nutritional assessment indicators, which are critical for evaluating the nutritional status and determining appropriate interventions. These indicators include anthropometric measurements (such as body mass index or BMI), biochemical tests (including serum albumin and micronutrient levels), clinical evaluations (assessing signs of malnutrition) and dietary assessments (reviewing food intake and patterns) **Objective:** The study aimed to evaluate the level of compliance to nutritional assessment practices and institutional determinants among for People Living with HIV in Dar es Salaam region. **Methodology:** The research was conducted in the Dar es Salaam region of Tanzania across three selected Regional Referral Hospitals: Mwananyamala, Amana, and Temeke. A cross-sectional descriptive design was employed, utilizing both primary and secondary data extracted from the medical records of PLHIV enrolled in care and treatment in 2023. The study involved a sample size of 409 participants from 3 referral hospitals. Descriptive statistics were used to analyze data and presented in tables, charts, and bar graphs. Findings: The study revealed high compliance with most clinical and anthropometric assessment practices such as routine weight and height measurements and BMI documentation while MUAC measurements were notably underutilized. Dietary assessments showed excellent compliance at both intake (99.3%) and follow-up visits (97.8%). However, biochemical assessment, particularly hemoglobin testing, showed a declining trend from 78.1% at baseline to 67.3% at follow-up. Institutional factors such as lack of standard tools, inadequate staffing, limited recent training, and insufficient management prioritization negatively affected compliance levels in some facilities. **Conclusion:** Although nutritional assessments are well integrated into HIV care, persistent gaps in biochemical assessments and institutional support threaten the quality and consistency of services. xiv **Recommendation:** The study recommends strengthening staff capacity through regular training, improving access to standard tools and diagnostic services, and enhancing managerial commitment to nutrition assessment practices within HIV care settings.

221. Macha, C.A. (2025). Handwashing practices and perceptions among community members in Muleba District, Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Handwashing with soap is a vital preventive measure against infectious diseases, particularly respiratory and fecal-oral diseases. Despite its significance, hand hygiene practices are alarmingly low in Sub-Saharan Africa, including Tanzania, where only 15% of individuals wash their hands with soap after using the toilet and 37% before eating. This study aimed to explore handwashing practices among different demographic groups in Muleba District, Tanzania. **Methods:** Analytical cross-sectional survey was conducted with 400 participants, using structured interviews to collect data. Univariate analysis and Both Binary logistic regression analyses identified demographic predictors of disease susceptibility perceptions, while Chi-square tests assessed associations between perceived severity of respiratory, gastrointestinal, and dermatological diseases**. Results:** The demographic analysis found that there is predominance of females (59.8%) and a significant portion of the population (60.0%) being unemployed, with 57.5% having completed primary education. Handwashing practices showed that while a majority reported washing hands before and after eating (62.25%) adherence to essential hygiene measures, such as washing after using the toilet and upon returning home, was notably low. Perceptions regarding susceptibility and severity of handwashing-preventable diseases were generally high, with 79.50% and 78.50% respectively. Conclusion: The Findings emphasized the need for targeted public health interventions to enhance hand hygiene awareness particularly in rural areas. **Recommendations:** To enhance handwashing practices in Muleba, comprehensive health education campaigns should be implemented in communities to emphasize hygiene's role in disease prevention. Additionally, improving access to handwashing facilities in public spaces and workplaces will support consistent handwashing behaviors.

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222. Macha, F.T. (2025). Factors Associated with Short-Term Complications of Hydrocelectomy Performed in Surgical Camps in the Coastal Region of Tanzania. Muhimbili University of Health and Allied Sciences

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Abstract

Background: Hydrocelectomy is a common surgical intervention in regions with high prevalence of hydrocele due to filariasis. Despite its frequent implementation in surgical camps in coastal Tanzania, there is limited research on short-term complications and their association with various factors. Understanding these complications is crucial for improving surgical outcomes and patient safety. **Objective:** This study aimed to assess the prevalence of 30-day post-surgical complications following hydrocelectomy, evaluate the influence of patient demographics and comorbidities on these complications, and examine the impact of perioperative practices. **Materials and Methods:** This was a prospective cohort study will be conducted from November 2024 to December 2024 at surgical camps in the coastal region of Tanzania. All consecutive patients undergoing hydrocelectomy during the study period were included until the required sample size of 92 patients was reached. Data on patient demographics, comorbidities, surgical techniques, anesthesia types,

and perioperative practices were collected. Postoperative complications were classified using the Clavien-Dindo classification system. Statistical analysis included calculating the prevalence of complications, assessing associations between demographic and perioperative variables with complications using chi-square tests and logistic regression, and evaluating the impact of different perioperative practices on outcomes. **Results:** This study examined 255 patients with hydrocele who underwent hydrocelectomy in surgical camps conducted in Masasi and Kisarawe district hospitals in November 2024. Majority of study participants were peasants of low social economic status. Most hydrocelectomy were done by excisional surgical technique, 98.4% while only 1.6% employed Lord's technique. Intraoperative additional procedures included hernia repair (17.6%) and orchidectomy (0.8%), Other procedures were scrotoplasty and cord repair (5.5%). Hydrocelectomy in surgical camps is a safe procedure as 28.6% of participants experienced short-term complications while 71.4 did not. Among those who experienced short term complications, 52.1% had seroma,41.1% had SSI while 6.8% had hematoma. Co-existence of hydrocele and hernia was significantly associated with short term complication with P value of 0.01, while amount of hydrocele fluid more than 500mls had a P value of 0.005 **Keyword:** Hydrocele, hydrocelectomy, surgical camps, short-term complications

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223. Machange, A. (2025). Challenges and coping strategies among nurses caring for patients with mental illness at Muhimbili national hospital, Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Mental health concerns are increasingly recognized as critical worldwide, particularly for nurses caring for patients with mental illness. These nurses face challenges such as high workloads, emotional exhaustion, stigma, and limited resources, which affect their well-being and job performance. However, limited information exists on these **challenges and the coping** strategies they use. This study explored the challenges and coping strategies of nurses at Muhimbili National Hospital (MNH). **Methods and Materials: This** qualitative exploratory study was conducted at the Department of Psychiatry and Mental Health, MNH. Purposive sampling recruited 15 nurses who participated in in-depth interviews guided by semi-structured questions. Interviews were audio-recorded, transcribed verbatim, and analyzed thematically to identify patterns and themes. **Findings:** Five key themes emerged from the data: four challenge-related themes with eleven subthemes, and one coping theme with two subthemes. Nurses face an insecure working environment characterized by patient assaults, unreliable restraint equipment, power outages, inadequate safety training and staffing shortages. Psychological burnout results from heavy workloads, low morale and work stress, and mental fatigue. Resource constraints, including shortages of medicines, equipment, and space, further complicate their work. Nurses also face stigma due to community misconceptions about mental illness. Despite these challenges, they use personal coping strategies, teamwork and collaborative problem solving, which include receiving support from leadership and peers to manage stress and maintain well-being. **Conclusion:** Nurses caring for patients with mental illness at MNH face numerous challenges that compromise their safety and care quality. Despite these difficulties, they employ personal coping strategies, teamwork, and collaborative problem-solving to manage stress. Addressing these issues requires

improved working conditions, continuous training, reliable medical supplies, and supportive policies to strengthen the workforce and reduce stigma, ultimately enhancing mental health service delivery.

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224. Machano, M.B. (2025). Pattern, management and management outcome in patients with mandibular condylar fracture attending the Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Mandibular condylar fracture is one of the most common injuries managed by oral and maxillofacial surgeons. It accounts for about 10% – 40% when compared with other regions of the mandible; however, this percentage is not constant throughout the world. Road traffic accident (RTA) is the number one dependent factor contributing to mandibular condylar fracture in most developing countries, whereas interpersonal violence and falls from height are more common in developed countries. Currently in Tanzania, injuries associated with RTA, interpersonal violence, assault, sport-related injuries have increased, which has led to an increase in skeletal-related fractures. There is limited accessibility to data regarding mandibular condylar fractures. **Objective:** To determine patterns, management and management outcomes in patients with mandibular condylar fractures attending Muhimbili National Hospital (MNH). **Method:** This was a descriptive prospective-hospital-based study conducted at the Oral and Maxillofacial Surgery department clinic, Emergency Medicine Department of MNH and Muhimbili Orthopaedic Unit, as well as wards 23 and 24 of the MNH (MNH). The study included patients with mandibular condylar fractures at Oral and Maxillofacial department, EMD and those who are admitted to wards 23 and 24. Patients were interviewed using a specially designed structured questionnaire. The interview enquired information regarding sociodemographics and the aetiology of mandibular condylar fracture. Radiographic investigation, including plain radiography, OPG and Computed tomography (CT-Scan), were used to confirm diagnosis and plan for management. The chi-square test was done by using Statistical Package for Social Science (SPSS) 26.0 by univariate analysis. A probability (p) value of 0.05 was considered statistically significant. SPSS was also used to construct frequency tables and graphics. **Results:** A total of 87 patients with 107 mandibular condylar fractures were included in this study. The majority (77%) of the patients were male with an overall male-to-female ratio of 7.7:1. The Mandibular condylar fractures affected mostly the individuals between 21 to 30 years (49.4%). Road traffic accidents (74.4%) were the main cause, and unilateral fractures were more frequent 65, 74.7%). Condylar head fractures 40, 42.6%) associated with parasymphyseal 42, 50.50%) fractures were the most common among the study participants. A majority of 43 (49.4%) of the patients were managed with intermaxillary fixation. Most 51 (58.6%) of the patients were very satisfied with the type of management given. **Conclusion:** Mandibular condylar fractures were more prevalent in males and the younger age group. RTA was the most common aetiology, and unilateral fractures occurred more commonly than bilateral fractures. Fracture of the condylar head was most commonly encountered, while the parasymphysis was the most common associated site. Closed reduction was performed in most cases and the majority of the patients were very satisfied with type of management given. To

reduce the occurrence of these fractures, programs and strategies should be formulated to initiate community-based education on road safety.

225. Mafuru, M. (2025). Determinants of timely antenatal care-seeking behavior among pregnant women in Meru district, Arusha region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Timely and appropriate antenatal care-seeking during pregnancy is essential for reducing maternal complications and improving outcomes. However, many pregnant women in low-resource settings such as Meru District, Tanzania, encounter non-clinical barriers that delay access to antenatal care (ANC). These include financial constraints, low education levels, long distances to health facilities, traditional beliefs, and limited healthcare facility operating hours. These as some of the non-clinical factors influencing the timing of ANC attendance. **Objectives:** This study aimed to assess the Determinants of Antenatal Care-Seeking Behavior Among Pregnant Women in Meru District. **Methodology:** An Analytical cross-sectional study design was used, involving structured questionnaires administered to pregnant women attending selected health facilities in Meru District. Descriptive statistics summarized participants' demographic and socioeconomic characteristics, while bivariate and multivariate analyses examined associations between independent variables (e.g., education level, income, distance to facility, traditional practices, and operating hours) and timing of ANC attendance (early vs. late). **Results:** The majority of respondents delayed ANC initiation beyond the first trimester (87%). These findings highlight the multifaceted non-clinical barriers that influence ANC-seeking behavior. Determinants, such as education, income, employment distance, and play a critical role in shaping ANC-seeking behavior among pregnant women in Meru District. Addressing barriers through community-based education, improved transport access, and health insurance promotion may enhance early ANC attendance and improve maternal health outcomes. **Conclusion:** Socio-economic factors, particularly education, employment, income level, and health insurance, are key factors influencing early antenatal care attendance.

226. Magani, B. (2025). Determinants of Long-Acting Reversible Contraceptive Use Among Women of Reproductive Age in Tarime District, Mara Region: A Mixed Method Study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Globally, contraceptive use has significantly improved maternal and newborn health. Among contraceptive methods, Long-Acting Reversible Contraceptives (LARCs) have proven to be cost-effective, with lower failure rates and higher safety compared to short-acting contraceptives. Despite these benefits, LARCs use remain low, particularly in sub-Saharan Africa. In Tanzania, low contraceptive use combined with high fertility rates contributes to increased maternal and newborn mortality, unsafe abortions, unintended pregnancies, and a growing burden on healthcare systems. **Objective:** To assess the use and determinants of LARCs among women of reproductive age (15-49 years) in Tarime District, Mara Region. **Methods:** This cross-sectional

study used a concurrent mixed-methods design, collecting quantitative and qualitative data simultaneously. A simple random sample of 103 women of reproductive age attending RCH clinics participated in the quantitative survey, while 17 women were purposively selected for in-depth interviews (IDIs). Quantitative data were analyzed in SPSS Version 25.0 using descriptive statistics and logistic regression, with significance set at $p < 0.05$ and a 95% confidence interval. Audio-recorded IDIs were transcribed verbatim and analyzed thematically to identify key determinants of LARCs use. **Results:** The findings from qualitative part revealed the need-related determinants influencing the use of LARCs. Many participants had limited knowledge of LARCs, along with misconceptions and fears about its safety and side effects. Despite these concerns, most recognized the benefits of LARCs in preventing unintended pregnancies, promoting financial stability, and supporting family planning. Decisions regarding LARCs use were often shaped by intimate partners, peers, and community networks. In quantitative part among 103 participants included in the study, majority (n=76, 73.8%), married 98, (95.1%), attained primary education (n=62, 60.2%) and were entrepreneurs (n=47, 45.6%). Bivariate analysis identified predisposing factors significantly determined LARCs use including, being aged 25 years and above (COR = 7.92, 95% CI: 2.91–21.56, $p < 0.001$), having secondary or diploma-level education (COR = 3.26, 95% CI: 1.36–7.80, $p = 0.008$), and having more than three children (COR = 8.50, 95% CI: 1.59–45.47, $p = 0.013$). Enabling determinants included having ever received counseling on LARCs (COR = 15.33, 95% CI: 3.96–59.37, $p < 0.001$) and peer influence (COR = 3.55, 95% CI: 1.28–9.85, $p = 0.015$). In the multivariate analysis, LARCs awareness (AOR = 5.89, 95% CI: 1.14–30.43, $p = 0.035$) vi and partner or spouse influence (AOR = 5.76, 95% CI: 1.12–29.67, $p = 0.037$) remained significantly associated with increased LARCs use. **Conclusion:** The study found that low LARCs use was mainly due to limited knowledge, misconceptions, inadequate counselling, and access barriers. Partner, peer, and provider support facilitated uptake. Enhancing community education, service delivery, and partner involvement can improve LARCs use.

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227. Magati, R.B. (2025). Nurses' experiences and perceptions toward the implementation of pressure ulcer risk assessment scale (PURAS) in Intensive Care Units in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pressure ulcers (PUs) are localized injuries to the skin and underlying tissue, particularly affecting critically ill patients in Intensive Care Units (ICUs) due to immobility and intensive interventions. Although preventable, pressure ulcers continue to cause serious complications. While Pressure Ulcer Risk Assessment Scales (PURAS) such as the Braden, Norton, and Water low scales are internationally recognized for early detection and prevention, their structured implementation in resource-limited settings like Tanzania remains inconsistent,highlighting the need to understand ICU nurses' experiences in resource-limited settings **Aim:** This study explored ICU nurses' experiences and perceptions toward the implementation of PURAS for critically ill patients in Dar es Salaam, Tanzania. **Methods:** A qualitative descriptive design guided the study. Twelve ICU nurses with over one year of experience were purposively selected. Data were collected through semi-structured interviews conducted in Swahili, transcribed verbatim, and analyzed thematically. Trustworthiness was

ensured through credibility, transferability, dependability, confirmability, and ethical rigor. **Findings:** Three central themes were obtained: Understanding and readiness for PURAS implementation, systemic and institutional constraints to implementation, and strategies and enablers for sustainable integration of PURAS. While participants acknowledged PURAS as valuable for early detection and prevention, its application was limited by proficiency gaps, inadequate training, partial interdisciplinary collaboration, lack of standardized documentation protocols, insufficient equipment, and staffing shortages. Participants proposed strategies such as contextualized protocol development, structured staff training, family involvement, and improved resource allocation. **Conclusion and Recommendations:** Although nurses demonstrated strong theoretical alignment with PURAS, implementation in practice was constrained by challenges which require interventions, including embedding PURAS into standard ICU procedures, fostering multidisciplinary accountability, ensuring continuous training, and strengthening infrastructural support. These findings uncover the operational realities of PURAS in Tanzanian ICUs and offer practical, evidence-based strategies for Tanzanian ICUs and provide transferable insights for similar resource-limited settings.
Keywords: *Pressure ulcer, risk assessment, PURAS, implementation, nurses' experience, ICU, qualitative study, Tanzania.*

228. Mageni, I. R. (2025). Prevalence and factors associated with frailty among older people living with HIV in Dar es salaam, Tanzania Muhimbili University of Health and Allied Sciences.

Abstract

Background: The population of older people living with HIV (PLHIV) is increasing globally due to improved HIV care and increased life expectancy. Chronic HIV infection and prolonged antiretroviral therapy (ART) use predispose this population to early-onset age-related conditions, including frailty. Limited data exist on frailty and its associated factors among older PLHIV in resource limited settings like Tanzania. Broad **objective:** To investigate the prevalence of frailty and factors associated among older PLHIV in urban Tanzania. Materials and methods: This study is part of the Tanzania HIV and Aging Longitudinal Cohort Study, a cohort of 400 older PLHIV, aged >50 years on ART in Dar es Salaam. A secondary analysis of baseline data from this cohort, collected between April and July 2024, was done for this cross-sectional study. Frailty was assessed using Fried Frailty Phenotype with five criteria; weight loss, exhaustion, low physical activities, grip strength and walking distance. The overall score of the tool ranges from 0-5, score of more than three domains is considered frail, if has one or two of the domains is prefrail and if scores zero then not frail. To determine the factors associated with frailty a multivariable ordinal logistic regression analysis was performed. **Results:** The median age was 57 (interquartile range (IQR): 53-63) years, half of the participants were female (50%, n=200), majority were virally suppressed (71.8%, n=287) and about half were on ART for 10-19 years (51.2%, n=205). The prevalence of frailty and prefrailty were 13.9% and 49.1% respectively. Age 60-69 years (adjusted odds ratio (aOR)=1.39, 95% CI: 1.36 1.43), being female (aOR=1.46, 95% CI:1.26-1.69), polypharmacy of 1-2 medications (aOR=2.16, 95% CI:1.75-2.67), and more than two medications

(aOR=7.29, 95% CI:2.26 23.56), underweight (BMI25) (aOR=1.32, 95% CI:1.23-1.43) were significantly associated with frailty. **Conclusion and recommendation:** There is high prevalence of frailty and prefrailty among older PLHIV in Dar es salaam associated with being female, age between 60-69 years, polypharmacy and with abnormal weight. Comprehensive geriatric management that are gender specific should include non-pharmacological and abnormal weight management to manage frailty effectively.

229. Magesa, Z. (2025). Menstrual disorders and correlates among reproductive age women with chronic kidney disease attending tertiary hospitals in Dar es salaam. Muhimbili University of Health and Allied Sciences

Abstract

Background: Chronic Kidney Disease (CKD) is a major public health concern globally, affecting over 800 million people. In Tanzania, CKD affects approximately 12%–14% of the population, with a higher burden among women. In premenopausal women, CKD disrupts the hypothalamic-pituitary-ovarian axis, leading to menstrual abnormalities. These abnormalities adversely affect fertility, psychological well-being, and overall quality of life. Despite increasing nephrology services in Tanzania, research on menstrual disturbances in women with CKD remains limited. **Objective:** To determine the prevalence of menstrual abnormalities and associated factors among women of reproductive age with CKD in Dar es Salaam. **Methods:** A hospital-based analytical cross-sectional study was conducted across five facilities in Dar es Salaam. A total of 110 women aged 18–45 years with CKD stages 1–5 were recruited through convenience sampling. Data were collected using a structured questionnaire administered in Swahili by both participants and researchers. The data were analyzed using SPSS Version 27. Descriptive analysis was performed to determine frequencies and percentages of sociodemographic and clinical variables. Bivariate and multivariate logistic regression analyses were conducted to identify factors independently associated with menstrual abnormalities; p-value <0.05 was considered statistically significant. **Results:** The prevalence of menstrual abnormalities was 72.7%, with amenorrhea being the most frequent type (46.4%). The presence of comorbidities, hypertension, hemodialysis status, duration of CKD, CKD stage, access to a health care provider, and history of depression were significantly associated with the study outcomes. Multivariate analysis revealed that women with CKD for more than >6 years had a 17.7 times higher likelihood of experiencing menstrual abnormalities compared to those with CKD for less than one year (aOR =17.7; 95% CI: 1.46–214.82; p = 0.024). Additionally, having a history of depression or anxiety was significantly associated with menstrual abnormalities among CKD patients (aOR = 10.48, 95% CI: 1.62–67.64, p=0.014). Hemodialysis showed significance in bivariate analysis but was not independently associated in multivariate regression. **Conclusion:** Menstrual abnormalities are highly prevalent among women of reproductive age with CKD in Dar es Salaam. Longer disease duration and psychological distress are strong independent predictors. These findings highlight the need for routine menstrual health screening and integrated psychosocial support in nephrology care to improve reproductive and overall health outcomes. Budget: The total budget for the study was TSH 1,532,200.

230. Maheda, J.L. (2025). Factors Associated with Knowledge and Practice on Hemodialysis Catheter Care Among Patients at Bugando Medical Centre in Mwanza, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstarct

Background: Chronic kidney disease (CKD) is a rising global public health issue particularly in low and middle-income countries like Tanzania. As chronic kidney disease advances to end stage kidney disease (ESKD) patients require renal replacement therapies including haemodialysis. In Tanzania about 3231 of CKD patients are on haemodialysis service, the procedure that requires vascular access to be performed. Currently about 60% of patients on haemodialysis are using the temporary vascular access since centers offering the permanent vascular access are scarce and high costs of the services. Poor care of the haemodialysis catheter due to inadequate knowledge and care practices leads to dislodging, blocking, catheter-related infections, morbidity and mortality. Although haemodialysis service through the temporary vascular is highly used in most of centers in Tanzania, there is limited evidence of the knowledge and practice level of these patients. **Objective:** To determine factors associated with knowledge and practice on haemodialysis catheter care among patients at Bugando Medical Centre in the Mwanza region. **Methods:** A descriptive cross-sectional study was conducted among 97 patients receiving haemodialysis. Data were collected using a structured, self/researcher administered Swahili questionnaire. Data were analysed using SPSS version 25; descriptive analysis was done for demographic, knowledge and practice to determine frequency and percentages. Bivariate analysis was used to determine association between the study variables. Further analysis using multivariate regression was done to determine the nature of association; with statistical significance set at $p < 0.05$. **Results:** This study enrolled 97 participants with the mean ± standard deviation for knowledge and practice were 9.15 (±1.79), 43.95 (±12.46) respectively. In this study, 50 (51.5%), 44(45.4%) of the participants had satisfactory knowledge and practice respectively. This study found also that satisfactory knowledge was associated with younger age $p = 0.036$), and Haemodialysis duration ≥ 2 years, $p = 0.003$). Satisfactory practice was associated with younger age $p = 0.018$), and longer haemodialysis duration $p=0.021$). **Conclusion:** The findings indicated that just over half of participants had satisfactory knowledge but less than half demonstrated good practice and the key factors associated with better outcome include age, higher education and longer haemodialysis duration so the targeted patient education is crucial to bridge the gap between knowledge and practice to reduce catheter related complications.

231. Mahundi, T.P. (2025). Clinical characteristics and predictors of in-hospital mortality among chronic kidney disease patients at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic kidney disease (CKD) is an increasing global health challenge, with a particularly high burden in sub-Saharan Africa where it disproportionately affects younger populations and frequently presents at advanced stages. In Tanzania, limited access to renal replacement therapy contributes to poor outcomes, yet data on the clinical characteristics and in-hospital outcomes including mortality and their predictors among CKD patients remains scarce. **Objective:** To assess the clinical characteristics and identify predictors of in-hospital mortality among CKD patients admitted at Muhimbili National Hospital (MNH). Methods: We conducted a hospital-based prospective cohort study involving patients admitted with CKD to the medical wards at MNH between September 2024 and January 2025. Participants were followed throughout their hospital stay for a maximum of 30 days. Data were collected using structured interviewer-administered questionnaires and a review of medical records. Descriptive statistics summarized patient characteristics and used Cox regression analysis to determine predictors of in-hospital mortality. **Results:** A total of 207 patients were enrolled, with a mean age of 55.5 ± 14.6 years; 56.0% were male and all patients presented with end stage renal disease. The in-hospital mortality was 17.4%, with severe hyperkalemia (55.6%) as the most common immediate cause of death. In multivariable Cox regression analysis the independent predictors for in-hospital mortality included: blood urea nitrogen (BUN) greater than 20 mmol/l (aHR: 3.67; 95% CI: 1.27–10.67; p = 0.017), admission to the high dependency unit (aHR: 5.25; 95% CI: 1.18 15.19; p = 0.002), presence of infection at admission (aHR: 1.54; 95% CI: 1.07–2.23; p = 0.021), and conservative management without dialysis (aHR: 7.55; 95% CI: 3.13–18.17; p = 0.001). **Conclusion:** A high in-hospital mortality was observed among CKD patients admitted to MNH. Most patients presented with advanced disease and multiple comorbidities. Independent predictors of mortality included elevated BUN, admission to the HDU, presence of infection, and conservative kidney management. Strengthening early infection control, expanding access to dialysis, and improving critical care support are essential to reduce mortality and improve outcomes.

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232. Mahushi, D.J. (2025). Prevalence and risk factors of asymptomatic cryptococcal antigenemia among HIV positive individuals in Shinyanga region, Muhimbili University of Health and Allied Sciences. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Asymptomatic cryptococcal antigenemia is often overlooked, particularly in immunocompromised individuals such as those with HIV/AIDS. If left untreated, it can progress to cryptococcal meningitis - a severe condition responsible for approximately 15% of HIV/AIDS-related deaths globally, with 75% of cases occurring in sub-Saharan Africa. Despite increased antiretroviral therapy (ART) coverage, the incidence of cryptococcal meningitis remains unchanged. Individuals with CD4 counts around 100 cells/µL are known to harbor asymptomatic infections and benefit from screening. However, there is limited research on asymptomatic cryptococcal antigenemia in patients with CD4 counts around 200 cells/µL. Studying this less-explored group could enhance preventive strategies and improve health outcomes. **Objectives:** This study aimed to determine the prevalence and risk factors of asymptomatic cryptococcal antigenemia among HIV- positive clients attending care and treatment clinics in the Shinyanga

region. **Methodology:** A cross-sectional study was conducted among 296 HIV- positive clients attending care and treatment clinics in the Shinyanga region. Participants aged 18 years and older were enrolled if they met one or more of the following criteria: ART-naïve, currently on ART, recently returned to treatment, or had a recent high viral load (≥1000 copies/mL) with a CD4 count ≤200 cells/μL. Serological testing for cryptococcal antigen was performed using a lateral flow assay. Data on demographics, CD4 count, ART adherence, and clinical history were collected through structured questionnaires and data abstraction sheets. Statistical analysis was conducted using STATA 17 to determine the prevalence of asymptomatic cryptococcal antigenemia and its associated risk factors. **Results:** The overall prevalence of asymptomatic cryptococcal antigenemia was 7.1% (21/296; 95% CI 4%-11%). Key factors associated with positive cryptococcal antigen results were receiving care in primary health facilities (AOR: 4.92, 95% CI: 1.01-23.91, p=0.048), monthly earnings less than 50,000 TZS (AOR: 32.02, 95% CI: 4.46-232.44, p=0.001), and CD4 count of 50-200 cells/μL (AOR: 12.72, 95% CI: 3.08-52.50, p=<0.001). **Conclusion:** The study identified a notable prevalence of asymptomatic cryptococcal antigenemia among HIV positive individuals. These findings underscore the importance of routine screening in high-risk groups to facilitate early detection and prompt intervention, which may reduce morbidity and mortality associated with cryptococcal disease.

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233. Maiga, M. M. (2025). Clinical Profile, Spectrum and Factors Associated with Outcome of Pediatric Patients with Congenital Heart Disease Presenting to Emergency Department at Muhimbili National Hospital, Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Congenital heart disease is a leading cause of morbidity and mortality in paediatric populations worldwide, including Tanzania. At Muhimbili National Hospital, the Emergency Department frequently treats paediatric patients with congenital heart disease, care is challenging due to multiple factors, and outcomes remain unknown in resource-limited settings. The lack of comprehensive data on the clinical profiles, spectrum of congenital heart disease conditions, and factors associated with mortality hinders efforts to improve care and their outcomes. This study aims to address these gaps by providing detailed insights into these areas, ultimately aiming to enhance clinical practice and patient outcomes. **Methods:** Hospital based cross-sectional study was conducted by reviewing the charts of paediatric patient with congenital heart disease from April to May 2025. All eligible paediatric patients with congenital heart disease attending at Emergency Muhimbili national hospital and admitted to Jakaya Kikwete cardiac institute from 1st Jan 2023 to 30th December 2024 were included. Data collected included demographic information, clinical characteristics, and 48-hour outcomes. Data was transferred to and analysed by SPSS software version 26. Descriptive analysis was summarized as frequencies and median with interquartile range (IQR.). Statistical analyses included chi square or fishers test, univariate and multivariate regression analysis was to identify factors associated with mortality. A significance level of <0.05 was used, and adjusted odds ratios were reported to quantify the association of various factors with mortality. **Results:** 227 Paediatric patients aged 28days to 14yrs with congenital heart disease were enrolled in the study. The mortality rate at 48hr in this study was

10.1% [95%CI :6.2%-14.1%). The majority (70.5%) had Acyanotic heart disease, while 29.5% presented with cyanotic types. The most common presenting symptom was difficulty in breathing (96.9%), and more than half (55.5%) were diagnosed within the preceding six months. Logistic regression analysis identified age 1–4 years (aOR = 6.75, 95% CI: 1.13–40.50), male gender (aOR = 7.02, 95% CI: 1.31 37.61), and cyanotic congenital heart disease (aOR = 5.13, 95% CI: 1.31–20.06) were associated with 48hr mortality. Notably, normal nutrition was associated with reduced mortality (aOR = 0.002, 95% CI: <0.001–0.028) and moderate congenital heart disease as compared to severe congenital heart disease was associated with reduced mortality (aOR = 0.18, 95% CI: 0.03–0.95). **Conclusion:** Congenital heart disease poses a significant burden among paediatric patients at Muhimbili National Hospital requiring timely diagnosis, initial resuscitation and appropriate timely referral for cardiology interventions. Acyanotic Congenital heart disease was more prevalent, but cyanotic heart disease was associated with higher mortality. Key predictors associated with mortality included age under 5 years, male gender, having cyanotic heart disease, presence of severe form of congenital heart disease, and malnutrition, highlighting the need for earlier screening, nutritional support, and targeted interventions in resource-limited settings.

234. Maimu, L. D. (2025). Exploring Experiences of Online Gender-Based violence among Female Undergraduate University Students in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Online gender violence (OGBV) is now a threat globally, primarily among female university students who engage heavily in the internet. OGBV includes cyberstalking, cyber harassment, and involuntary posting of indecent photos or videos, which have serious psychological, social, and academic impacts on the survivors. Despite increasing internet penetration in Tanzania, there is limited research documenting the lived experiences of female undergraduate students, highlighting a critical knowledge gap. **Objective:** The study aimed to explore the experiences of Online Gender-Based Violence (OGBV) among female undergraduate university students in Tanzania, specifically focusing on common forms, contributing factors, coping mechanisms, and institutional responses. **Methodology:** This exploratory qualitative study was conducted among female undergraduate students in universities, student leaders and university officials in Dar es Salaam (MUHAS and KIUT). It employed purposive sampling, using 16 Key Informant Interviews (KIIs), two Focus Group Discussions (FGDs), and a policy document review. Data were analyzed using thematic analysis. **Results:** The study established five common forms of OGBV: cyberbullying, image-based sexual violence, unwanted sexual messages, sexist hate speech, and doxxing. Students employed individual coping mechanisms such as staying offline, receiving emotional support from friends and family members, and reporting to university authorities. Institutional support systems, such as peer counselling and gender desks, were found to be variably known, underused, and perceived as ineffective. Conclusion: OGBV is a highly neglected but far-reaching threat to the physical security, mental health, and academic participation of Tanzanian university female students. Though students show individual resilience, institutional responses are weak, poorly publicized, and confined to offline violence. **Recommendation:**

Prevention of OGBV demands a multi-pronged approach with digital safety training, student-centered policies, further awareness campaigns, and enhanced institutional dedication towards the protection of students in both physical and online spaces.

235. Makame, K.K. (2025). Nurses' Knowledge and Factors Influencing Early Recognition and Intervention in Patient Deterioration in General Wards at Mjini Magharibi District Hospitals, Zanzibar. Muhimbili University of Health and Allied Sciences

Abstract

Background: Early detection and timely intervention in patient deterioration are crucial components of quality nursing care for hospitalized patients. Vital signs such as Blood Pressure, temperature, Heart Rate, oxygen saturation, and Respiratory Rate reflect patients' current medical status and must be assessed consistently and accurately documented. Nurses play vital roles in recognizing and responding to patient deterioration via nurses' practices. **Objectives:** To assess the nurses' knowledge of early recognition and intervention on patient deterioration, as well as the factors influencing early recognition and intervention on patient deterioration by nurses at Mjini Magharibi District Hospitals, Zanzibar. **Methodology:** A descriptive cross-sectional study was conducted in Mjini Magharibi district hospitals, Zanzibar, involving 107 nurses selected through stratified random sampling. Data were analyzed using SPSS with descriptive and inferential statistics. Included were registered nurses from selected facilities, while those on leave, with under six months' experience, or without informed consent were excluded from the study. **Results:** Nearly half (48.6%) had poor knowledge of early recognition deterioration, and 74.8% lacked knowledge of intervention. Centre and area of practice, education level, and life-support training were significant predictors ($p<0.001$). Most lacked formal training (87.9%), felt unconfident, and cited inadequate resources, time, and protocol use. However, nearly half supported early warning systems and guideline implementation. **Conclusion:** Nurses demonstrated significant knowledge in early recognition and intervention in patient deterioration, but factors limited training, unclear protocols, inadequate support, and poor Early Warning System utilization, influencing the effectiveness of practice. **Recommendation:** include strengthening in-service education, implementing structured simulation-based training, and standardizing clinical protocol, like the Early Warning system. Life-support training should be enhanced and made mandatory to ensure patient safe

236. Malima, A. T. (2025). Influence of mental health status and traditional beliefs on antiretroviral therapy adherence among adults living with HIV in Kiteto District, Tanzania, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Adherence to antiretroviral therapy (ART) is essential for effective HIV management and improving the health outcomes of people living with HIV (PLHIV). However, maintaining consistent adherence remains a challenge, particularly in rural settings like Kiteto District, Tanzania. Factors like limited access to mental health services, stigma, and cultural practices may influence a patient's ability to stay on treatment. **Objective:** To assess the influence

of mental health conditions and traditional beliefs on ART adherence among adults living with HIV in Kiteto District, Tanzania. **Methodology:** The study employed an analytical cross-sectional design. The study population consisted of adults living with HIV enrolled in ART programs across Kiteto District. A sample of 389 participants was proportionately selected from 10 healthcare facilities through a two-stage cluster sampling approach. Data was collected using a structured questionnaire, MMAS- 8, PHQ-9, GAD- 7 and DSM-5 (PCL-5), and custom-designed questions to assess traditional beliefs. The data was analysed by STATA 15 software. Descriptive statistics summarized adherence levels, while Poisson regression models determined the association between ART adherence and mental health and traditional beliefs. Results: In this study, 83.5% of the participants self-reported adherence to ART. Traditional beliefs and trauma exposure were significantly associated with ART adherence, with moderate traditional beliefs being linked to lower adherence and clinically significant trauma-related symptoms being linked to higher adherence. **Conclusion:** ART adherence in Kiteto is significantly influenced by trauma and traditional beliefs. HIV programs, especially in rural communities, should prioritize mental health screening and community education in ART services to enhance adherence to treatment outcomes.

237. Malima, J. L. (2025). The prevalence of flat foot and associated risk factors among school-aged children 10 15 years in Kilombero Morogoro. Muhimbili university of health and Allied Sciences.

Abstract

Introduction: The foot is located below the ankle and plays a pivotal role in supporting weight, balance, and movement. It has three arches: the medial and lateral longitudinal and transverse arches that are maintained by bones, ligaments, and muscles. The medial arch, the most prominent, is often assessed using the Arch Index (AI). Flat foot (pes planus), marked by collapse of the medial arch, may be flexible or rigid and is common in children, often without symptoms. Early screening using standard arch measures helps ensure proper foot development. **Objectives:** The study aimed to determine the prevalence of flatfoot and its associated factors among school-aged children (10–15 years) in Kilombero District, Tanzania. Methods: A cross-sectional study was conducted among 539 primary school children selected from 10 schools using multistage sampling techniques. The foot arch was assessed using the Staheli Plantar Arch Index (SPAI) through the ink footprint method. Data was collected using a well-structured questionnaire and through physical examination of the foot. Descriptive analysis of the data was done through univariate and multivariate logistic regression models. **Results:** Out of 539 samples, 53.1% were females and 46.1% were males, with a mean age of 12.03±1.21 years. Most participants resided in rural areas (60.7%) and attended government schools (87.4%). The mean height and weight were 1.39 ± 0.13 m and 35.51 ± 8.62 kg, with an average BMI of 18.25 ± 2.94 kg/m². The average foot arch index (SPAI) was 1.141±0.046 cm (left) and 1.141±0.033 cm (right). The overall flatfoot prevalence was 32.1%, with flexible flatfoot being the most common type (71.7%). It was significantly associated with younger age (10–12 years), male gender, rural residence, wearing sandals, overweight status (AOR=5.604), and foot pain (AOR=6.420). SPAI values were significantly higher in overweight and symptomatic children ($p<0.05$). A small but significant number of children (3.5%) exhibited the “too many toes” sign. **Conclusion and recommendations:** Flatfoot is prevalent among school-

aged children in Kilombero District and is significantly associated with modifiable risk factors such as footwear type, BMI, and lifestyle differences related to residence. Early identification and targeted preventive strategies, including education on proper footwear and promotion of physical activity, are essential to reduce long-term complications. Keywords: Flatfoot, children, prevalence, Staheli Index, BMI, foot pain, Tanzania, risk factors, musculoskeletal health.

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238. Malique, H. (2025). Cross-Sectional Imaging Patterns of Intracranial Breast Cancer Metastases by Immunohistochemical Subtypes at Ocean Road Cancer Institute. Muhimbili University of Health and Allied Science.

Abstract

Background: Breast cancer represents a significant public health challenge in Tanzania, being the second most common cancer among women after cervical cancer. The disease frequently metastasizes to the brain, with intracranial metastases representing a major cause of morbidity and mortality. While the relationship between breast cancer molecular subtypes and patterns of intracranial metastasis has been studied in Western populations, there is a paucity of data from sub-Saharan Africa, particularly Tanzania **Objective:** This study aimed to describe the cross-sectional imaging patterns of intracranial metastases in patients with breast cancer and determine their association with immunohistochemistry subtypes at Ocean Road Cancer Institute (ORCI). **Methodology:** A hospital-based cross-sectional study was conducted at ORCI. Medical records and imaging studies of 180 breast cancer patients with radiologically confirmed intracranial metastases and available immunohistochemistry data were reviewed. Data on metastasis location (supratentorial, infratentorial, leptomeningeal), number, size, and consistency were collected from CT and MRI studies. Associations with oestrogen receptor (ER), progesterone receptor (PR), HER2, and triple-negative status were analysed using SPSS version 23. Descriptive statistics were used for categorical variables, and Pearson Chi-square test was employed to assess associations, with statistical significance set at $p < 0.05$. **Results:** The mean age of participants was 48 years (SD ± 11.7), with 47.2% being younger than 45 years. The most common immunohistochemistry profile was ER-positive (50.6%), followed by HER2-positive (37.2%), PR-positive (35.0%), and triple-negative (32.2%). Regarding imaging patterns, the majority of metastases were supratentorial (78.3%), solid (67.2%), multiple (46.7%), and measured between 1 to 3 cm (43.9%). A statistically significant association was found between PR-positive status and supratentorial location (87.3% in PR-positive vs. 73.5% in PR-negative, $p=0.032$). No other significant associations were found between immunohistochemical subtypes and metastasis patterns, though several trends were observed. **Conclusion and recommendation:** Supratentorial, solid, and multiple metastases represent the most common imaging patterns of intracranial breast cancer metastases at ORCI. PR-positive tumour status is significantly associated with supratentorial location, suggesting potential value in predicting metastasis patterns. These findings support the integration of immunohistochemical profiling into neuroimaging assessment and surveillance protocols for breast cancer patients. Further large-scale, prospective studies are recommended to validate these findings and explore the underlying biological mechanisms.

239. Mangaa, H.Y. (2025). Assessment of resources availability for managing disease outbreaks at the emergency department of public hospitals in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Infectious disease outbreaks present a significant threat to public health systems, especially in low- and middle-income countries like Tanzania. Emergency Departments (EDs) play a critical role in outbreak detection, containment, and response as the main entry point for patients. Despite the establishment of EDs in many regional and district hospitals, their ability to manage infectious disease outbreaks remains uncertain **Objectives:** This study aimed to assess the preparedness of Emergency Departments in public hospitals in Dar es Salaam for managing disease outbreaks, focusing on the availability of resources, staff training, clinical protocols, communication systems between ED and public health authority **Methods:** A cross-sectional multicenter study was conducted between March and June 2025 across ten public hospitals in Dar es Salaam, including tertiary, regional, and district levels. Data were collected using a structured and validated checklist adapted from World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) guidelines, complemented by questionnaires. Information was gathered through direct observation and staff interviews. Descriptive statistics were used for analysis **Results:** The study revealed significant deficiencies in preparedness. Many departments lacked standardized clinical protocols, resulting in inconsistent case identification and isolation. While personal protective equipment (PPE) availability was adequate per shift, staff training on infection prevention and outbreak management was insufficient. Communication systems with public health authorities were weak, hindering timely reporting and coordination **Conclusion:** Emergency Departments in Dar es Salaam public hospitals face critical deficiencies in outbreak preparedness, particularly in staff training, clinical protocols, communication systems. Addressing these gaps through improved policy frameworks, regular training, and resource allocation is essential to strengthen outbreak response capacity, protect healthcare workers, and ensure community safety.

240. Manyawera, G.G. (2025) Facility readiness on the provision of parenteral feeding to the newborn among referral hospitals in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Premature and critically ill newborns, particularly those with infections, are among the leading causes of neonatal mortality in Tanzania, especially if they are unable to breastfeed effectively. In such cases, parenteral feeding plays a crucial role in their survival and development. However, limited information is available on the readiness of healthcare facilities to provide parenteral feeding for these newborns. This study assessed whether facilities are adequately equipped to deliver parenteral nutrition to neonates. **Broad objective:** - Was to assess health Facility readiness on the provision of parenteral feeding to the newborns admitted in the Neonatal Intensive Care Unit (NICU) among referral hospitals in Dar es Salaam. **Research methodology:** This study used a cross-sectional design with a quantitative approach, its setting was NICUs of all

government referral hospitals in Dar es Salaam, the study population was government referral hospitals that provide NICU services, the sampling taking was total sampling and the number of a sample size of five (5) hospitals that provide NICU services, The sampling technique was convenience sampling; data was collected using the prepared checklist adapted from WHO's facility service availability and readiness assessment(SARA) tool as used in other by other studies. Data was coded, then entered into SPSS version 27 for analysis, where descriptive statistics and used to analyze the readiness among the 5 facilities under the study. **Results: The** study revealed an overall readiness score of 65.7%, with national-level facilities scoring 73.3% and regional-level facilities scoring 60.3%. Infrastructure readiness was at 100%, skilled staff at 50%, equipment and drug availability at 87.3%, and the presence of guidelines at 71.7%. However, the process for providing total parenteral nutrition was available in only 20% of the assessed facilities. **Conclusion:** This study revealed inadequate overall readiness of health facilities to provide parenteral feeding to sick newborns, particularly in terms of the availability and provision of total parenteral nutrition and on-the-job training. These gaps may be among the underlying factors contributing to the persistently high neonatal mortality rate (NMR) in Tanzania, despite numerous government interventions. However, this study was limited to five facilities in Dar es Salaam. Further research with a larger sample size and inclusion of facilities from diverse regions is recommended to enhance statistical power and support the generalizability of the finding.

241. Manyuti, R.H. (2025). Acceptability and feasibility of sustained mobile-based coordination among healthcare professionals in human and animal sectors for rabies preventions, in Ilala municipality, Dar es salaam, Tanzania

Abstract

Background: Rabies is a fatal zoonotic disease caused by lyssaviruses, primarily transmitted to humans through bites from infected animals, especially dogs. While both pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) are key interventions, joint coordination between human and animal health sectors remains essential. Mobile-based coordination using smartphones and applications offers a potential strategy to enhance collaboration and information sharing. **Aim:** To assess the acceptability and feasibility of mobile-based coordination among healthcare professionals in the human and animal health sectors for rabies prevention in Tanzania. **Methodology:** A cross-sectional, mixed-methods study was conducted in Ilala District, Dar es Salaam from September to November 2024. Data collection involved self-administered questionnaires, focus group discussions, and in-depth interviews. Quantitative data were analyzed using SPSS (version 20), employing descriptive statistics and chi-square tests. Thematic analysis was applied to qualitative data. **Results:** Among 72 healthcare professionals, 86.1% had a positive perception of mobile-based coordination, with all recognizing its potential to improve information sharing. However, only 43% were willing to use such tools in their work. Key barriers identified included digital illiteracy (65%), inadequate infrastructure (72.2%), and work overload (90.3%). Feasibility was significantly associated with age ($p = 0.01$), education level ($p = 0.03$), and residence ($p = 0.003$). Qualitative findings revealed further obstacles such as financial constraints, poor network coverage, policy gaps, fear of stigma, and limited intersectoral collaboration. **Conclusion & Recommendation:** While mobile-based coordination is viewed positively, its

adoption is hindered by infrastructural, financial, and organizational challenges. Strengthening digital literacy, improving mobile infrastructure, and developing supportive policies are vital for fostering effective collaboration in rabies control.

242. Marandu, K. (2025). Assessment of Antibiotic Prescription Rationality for Acute Pharyngitis in Ubungo Municipal District Health Facilities: Prevalence and Associated Factors. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Acute pharyngitis is one of the most common upper respiratory tract infections. Inappropriate antibiotic prescribing for this predominantly viral illness contributes to antimicrobial resistance. Data on prescribing practices in Tanzania's district-level facilities are limited, hindering targeted interventions. **Objective:** This cross-sectional study assessed the prevalence of acute pharyngitis among patients with sore throat attending Ubungo Municipal district health facilities, quantified irrational antibiotic prescribing, and identified associated factors. Methods: We analyzed secondary data from records of patients diagnosed with acute pharyngitis in June 2025 at selected public and private facilities. Facilities were chosen via two-stage cluster sampling; patient records were randomly sampled from HMIS and GoT-HOMIS. A structured tool captured demographics, diagnostic methods, and prescription details. Data were analyzed in STATA 15: prevalence and prescribing patterns were reported as percentages; associations were tested with chi-square and t-tests. Multivariable logistic regression estimated adjusted odds ratios (AOR) with 95% confidence intervals (CI), significance at $p<0.05$. **Results:** Among 421 patients with sore throat, the prevalence of acute pharyngitis was 24.5% (95%CI: 20.4 – 28.9), the prevalence was higher in public (26.4%) than in private (19.1%) facilities. Only 7.9% of cases underwent laboratory confirmation, with 92.1% diagnosed clinically. Antibiotics were prescribed in 93.2% of cases, though only 45% adhered to national guidelines. Inappropriate indication accounted for 55.3% of irrational prescriptions. Patients in public facilities had 1.8 times higher odds of irrational prescribing than private facilities (AOR = 1.8; 95% CI: 1.1 –2.8). No significant associations were observed with sex or age. **Conclusion**: Acute pharyngitis is prevalent among outpatients in Ubungo Municipal, and irrational antibiotic use is widespread, especially in public clinics. Strengthening diagnostic capacity and enforcing guideline-based prescribing are essential to reducing antimicrobial resistance and improving care.

243. Martin, K.R. (2025). Factors associated with in-hospital complications among bladder cancer patients undergoing Total Cystectomy and Urinary diversion at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Total cystectomy and urinary diversion are the standard treatment for muscle-invasive bladder cancer and some high-risk non-muscle-invasive cases. Despite advances, it carries a high risk of postoperative complications and mortality, especially in low-resource settings like Tanzania, where delayed diagnosis and limited care increase risks. Data on complications after total cystectomy and urinary diversion in Tanzania are limited, making it crucial to understand

these factors to improve patient outcomes. **Objective:** This study aimed to determine factors associated with in-hospital complications among bladder cancer patients undergoing total cystectomy and urinary diversion at Muhimbili National Hospital from 2015 -2024. **Study Methods:** A retrospective cohort study which was conducted at Muhimbili National Hospital and it included bladder cancer patients who underwent total cystectomy and urinary diversion from 2015 to 2024. Data were extracted from records and the Jeeva database using a structured tool. Analyses were performed using IBM SPSS 28, with complications classified by Clavien-Dindo. Bivariate and multivariate were analysed using Ordinal Logistic regression to identify factors associated with severity of complications, minor (Grade I–II) and major (Grade III–V) complications ($p < 0.05$). **Results:** A total of 105 urinary bladder cancer patients were included, with a median age of 56 years; 75.2% were female. The most common histological type was squamous cell carcinoma (61.9%) and pathological stage PT2 was most frequent (44.8%). Nearly half (45.7%) had comorbidities, primarily hypertension (58.3%). Preoperative anaemia was present in 52.4%. The majority underwent Mainz pouch II urinary diversion (95.2%). Post-operative complications occurred in 43.8% of patients, while 56.2% had no complications. The most common complication was surgical site infection (20.0%) followed death 17.1%, which were significantly higher than expected. Pathological stage, hydronephrosis and types of urinary diversion were significantly associated with major complications, whereas age, gender, surgery duration, and intraoperative fluids were not. **Conclusion:** Bladder cancer in this population presents with advanced disease and unique characteristics, leading to high complication and mortality rates after total cystectomy and urinary diversion. Early detection and better perioperative management and improved surgical care to enhance outcomes in this high-risk group.

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244. Masaka, J. M. (2025). The role of pelvic magnetic resonance imaging in pretreatment staging of patients with cervical cancer at Ocean Road Cancer Institute in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer is a major global health concern and a leading cause of cancer related deaths among women. In Tanzania, it is the most frequently diagnosed cancer in women and the leading cause of cancer deaths in both sexes. It is primarily caused by persistent infection with Human Papillomavirus (HPV) and can spread locally or to distant organs. Accurate pretreatment staging is critical for effective management. The 2018 revision of the International Federation of Gynaecology and Obstetrics (FIGO) staging system allows the use of advanced imaging, particularly pelvic Magnetic Resonance Imaging (MRI), which improves staging accuracy by detecting factors like lymph node involvement that clinical staging often misses. Studies suggest that MRI can upstage about 50% of patients initially staged clinically. Despite its advantages, MRI access in Tanzania and other Low- and Middle-Income Countries (LMICs) remains limited, often confined to zonal hospitals, making clinical staging the most commonly used method. This study aimed to assess the role of pelvic MRI in pretreatment staging of cervical cancer patients at Ocean Road Cancer Institute (ORCI). **Objective:** To determine the role of pelvic

Magnetic Resonance Imaging in pretreatment staging of patients with cervical cancer at Ocean Road Cancer Institute, Tanzania. Methodology: This hospital-based cross-sectional study was conducted at ORCI, Tanzania, from August 2024 to February 2025, involving newly diagnosed cervical cancer patients. Data on demographics, clinical characteristics, clinical FIGO stage, and MRI findings were collected using a structured tool. Data were organized in Excel and analyzed using SPSS version 25. Frequencies and proportions summarized the findings, while the Wilcoxon Signed-Rank test assessed staging differences, with significance set at $p < 0.05$. **Results:** Among 196 participants, the mean age was 53.3 years old, and the majority of participants were aged 45–59 (57.7%). The majority were married, and lived in rural areas. Most had primary education level, were peasants, and had more than three children. Squamous cell carcinoma was the predominant histological subtype (92.3%), and 22.4% were HIV-positive. vi Stage IIB was the most common clinical FIGO stage (36.7%), followed by stage IIIA (24%). No cases were clinically staged as IIIB, IIIC1, or IIIC2. Pelvic MRI revealed varied cervical cancer patterns. Parametrial invasion was common (91.3%), vaginal involvement reached 61.3%, pelvic lymphadenopathy 53.6%, and bladder infiltration 13.7%. Most tumors appeared iso- to hypointense on T1W, intermediate on T2W, showed heterogeneous contrast enhancement, and 96.4% exhibited diffusion restriction on Diffusion-Weighted Imaging/Apparent Diffusion Coefficient (DWI/ADC). Among the 196 participants, 89.3% showed staging differences between clinical and MRI FIGO. MRI upstaged 79.1%, and downstaged 10.2%, with variation across stages ranging from 33.3% to 100%. **Conclusion:** This study shows that pelvic MRI significantly improves pretreatment staging accuracy in cervical cancer by better evaluating tumor extent and lymph node involvement, supporting its integration into standard staging and treatment planning protocols. **Recommendation:** It is recommended that pelvic MRI be integrated into routine cervical cancer staging protocols, supported by training, resource allocation, guideline updates, and further multicenter studies to enhance diagnostic accuracy and treatment planning.

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245. Masatu, J. C. (2025). Exploring for antibacterial agents from soil-dwelling bacteria in sea water-logged areas in Dar es Salaam, Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Introduction: Antimicrobial resistance is a global health problem. In the year 2019, 1.27 million deaths were directly attributed to antimicrobial resistance. This problem is aggravated by the improper use of antibiotics. Moreover, the lack of novel antimicrobial agents in both the preclinical and clinical pipelines further exacerbates this problem. The search for novel antibiotic-producing bacteria and their associated antibacterial agents from underexplored sites using innovative approaches is therefore imperative. Seawater-logged sites are potential ecological niches to search for antibiotic-producing bacteria. Salinity instilled in these sites by seawater introduces stressful conditions to resident bacteria, which may prompt them to produce bioactive secondary metabolites. The following study explored for antibiotic producers from soil-dwelling bacteria in seawater-logged areas in Dar es Salaam, Tanzania. **Methodology:** Samples were collected on three different sites: two sites in Mbweni ward and one in Ununio ward. The samples were then

packed in sterile containers and carried to MUHAS PharmRx discovery laboratory within 4h, where they were stored below 8ºC before further use. Isolation and cultivation of bacteria were done by iChip-based technology for 14 days. After 14 days, the agar plugs were removed and inoculated into Lysogeny Broth (LB) agar plates. The formed bacterial colonies were identified based on their morphology and Gram staining properties. Primary screening of antibacterial activity was done through agar overlay and perpendicular streaking. Subsequently, all antibiotic-producing bacteria were assessed for antibiotic sensitivity by the standard antibiotic disc diffusion method and further identified by Matrix Assisted Laser Desorption Ionization-Time of Flight Mass Spectrometry (MALDI-TOF MS). Fermentation of selected bacterial strains was performed, followed by extraction of the produced crude extracts. Lastly, the Crude extracts obtained were assessed for their antibiotic activity by broth microdilution against two bacteria test strains, Staphylococcus aureus (ATCC 29213) and Escherichia coli (ATCC 25922). **Results:** A total of 12 soil samples were collected. From the 12 soil samples, 29 bacterial isolates were obtained. Morphological identification revealed different morphological features, including shape, size, texture, and colony color. Gram staining identification revealed that 28 bacteria were Gram-positive and 1 was Gram-negative. Primary screening of the isolates obtained revealed that out of 29 bacteria, 9 had antibiotic-producing potential. MALDI-TOF MS identified 7 out of the 9 antibiotic producers, of which out of the 7 identified antibiotic-producing bacteria 6 were Bacillus spp. Antibiotic-producing bacterial isolates were most susceptible to meropenem. In secondary screening, the crude extract of DK004B was observed to have a Minimum Inhibitory Concentration (MIC) of 256 µg/ml against S. aureus. **Conclusion:** The application of iChip technology in this study proved effective in isolating a wide variety of bacterial colonies and increasing the cultivation throughput. Initial screening identified several isolates exhibiting antibacterial effects against Staphylococcus aureus and Escherichia coli. Most of the bacteria identified through MALDI-TOF MS belonged to the Bacillaceae family and were sensitive to commonly used antibiotics. The antibiotic-producing strains found had been reported in previous research to possess antibacterial properties. The crude extracts obtained after fermentation and extraction yielded satisfactory amounts and showed moderate antimicrobial activity. Further research should include genomic sequencing to identify the bacterial strains DK001A, DK001B, and DK004B.

246. Masinga, S. P. (2025). Mucociliary clearance time in adult patients with allergic rhinitis at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Allergic rhinitis affects an estimated 10–30% of the global population, and its prevalence is increasing, making it one of the most common chronic respiratory conditions. In Tanzania, AR is frequently encountered in routine Otorhinolaryngology consultations, though its exact national burden remains under-reported. Complications such as chronic rhinosinusitis, otitis media, and impaired quality of life add to its health and economic impact. studies have consistently shown prolonged mucociliary clearance in patients with AR; however, no study was done in Tanzania. This study was therefore designed to assess mucociliary clearance time in Tanzanian patients with allergic rhinitis, aiming to address this knowledge gap. **Objective:** To determine the

mucociliary clearance time in adult patients with allergic rhinitis at Muhimbili National Hospital. **Methodology:** It was a cross-sectional study, which was done from November 2024 to April 2025, involved 120 patients, and convenience sampling was used, which included all patients with allergic rhinitis who attended the Otorhinolaryngology clinic at Muhimbili National Hospital. Allergic rhinitis patients were diagnosed clinically. A saccharin test was used to measure mucociliary clearance time.All findings were recorded in the data collection sheet, which included, the mucociliary clearance time in patients with allergic rhinitis, the laterality of mucociliary clearance time in patients with allergic rhinitis, and the difference in mucociliary clearance time according to the Allergic Rhinitis and Its Impact on Asthma classification. Data was analysed using Statistical Package for Social Science software version 23. Fisher's or chi test were used to determine the relationship between variables, and a P-value of less than 0.05 was considered statistically significant.**Results:** Among 120 patients with allergic rhinitis who were recruited in this study, 56(46.7%) had prolonged mucociliary clearance time, and 22(18.3%) had severely prolonged mucociliary clearance time. Moreover, 105(87.5%) of patients with allergic rhinitis had symmetrical mucociliary clearance time, and 15(12.5%) patients had asymmetrical mucociliary clearance time. Patients with moderate-severe persistent allergic rhinitis had both a high proportion of prolonged mucociliary clearance time 30(54.5%) and severely prolonged mucociliary clearance time 16(29.1%), while patients with Mild intermittent allergic rhinitis had 10(38.5%) prolonged mucociliary clearance time and 1(3.8%) severely prolonged mucociliary clearance time. Prolonged mucociliary clearance time was observed across all age groups and in both sexes. The 44–56-year age group had the highest proportions of prolonged mucociliary clearance 12(50.0%) and 6(25.0%) severely prolonged mucociliary clearance, although the association between age and mucociliary clearance was not statistically significant. Male patients had a higher proportion of prolonged mucociliary clearance 29(51.8%), whereas female patients showed a higher proportion of severely prolonged mucociliary clearance 12(18.8%); however, these differences were not statistically significant.**Conclusion:** Mucociliary clearance is impaired in patients with allergic rhinitis, reflecting the effects of chronic inflammation on ciliary function and mucus properties. Although age and sex were not statistically associated with mucociliary clearance time, older patients tended to have greater impairment, suggesting an age-related decline in mucociliary function. Mucociliary clearance was mostly symmetrical between nostrils, consistent with the bilateral nature of allergic inflammation, while asymmetry in a minority of patients may be explained by the nasal cycle or anatomical variations. The degree of impairment was closely linked to disease severity and chronicity. Patients with moderate to severe persistent allergic rhinitis were most affected, while even those with milder forms showed evidence of dysfunction, indicating that mucociliary impairment can occur across the spectrum of disease. Mucociliary clearance assessment offers useful insights into the functional impact of allergic rhinitis and may serve as a valuable tool in evaluating disease severity and progression in clinical practice.**Recommendations**: Routine evaluation of mucociliary clearance time in patients with allergic rhinitis, as this may guide the progression of the disease and monitoring of its management**.**Further studies involving a large sample size should be designed to increase the generalizability of findings.

247. Masoud, S. R. (2025). Effect of wash practices and socio-cultural issues on anemia among pregnant women attending antenatal care clinics in Kaskazini Pemba. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Anemia in pregnancy remains a major public health problem in low- and middle-income countries, contributing to adverse maternal and perinatal outcomes. In Zanzibar, the prevalence ranges from 41% to 65%. Factors such as teenage pregnancy, poor dietary intake, inadequate antenatal care, and poor sanitation contribute to this burden. In Zanzibar, there is limited evidence on the influence of WASH practices and socio-cultural factors on anemia among pregnant women. Understanding local determinants is essential for informing targeted interventions. **Main objective:** To determine the association between Water, sanitation, and hygiene practices, socio-cultural issues, and anemia among pregnant women attending antenatal care clinics (ANC) in Kaskazini Pemba. **Methods:** A hospital-based cross-sectional study with a convergent mixed-methods design was conducted among 391 pregnant women attending antenatal care (ANC) clinics in Kaskazini Pemba. Quantitative data were collected through structured interviews, with hemoglobin levels extracted from ANC cards as the outcome variable. Bivariate and multivariable modified Poisson regression models were applied to identify factors associated with anemia. Additionally, 15 in-depth interviews (IDIs) were conducted with anemic pregnant women, and thematic analysis was used to explore contextual influences. **Results:** The prevalence of anemia was 82.3%. While most households reported using improved water sources (98.5%), only 29.2% treated water, 8.7% practiced proper waste disposal, and 18.7% had handwashing facilities. Use of unimproved water sources was associated with a 29% higher prevalence of anemia (aPR: 1.29; 95% CI: 1.16 –1.43), while availability of handwashing facilities was associated with a 24% lower prevalence (aPR: 0.76; 95% CI: 0.58 –1.00). Higher anemia prevalence was also reported among women with indigence (aPR: 1.16; 95% CI: 1.04 –1.29) or comorbidities (aPR: 1.22; 95% CI: 1.12–1.33). Qualitative findings highlighted unreliable water access, food taboos, poor waste management, and limited decision-making autonomy as major contributors. **Conclusion:** Anemia in pregnancy is highly prevalent in Kaskazini Pemba. Inadequate water access, poor sanitation and hygiene, food taboos, and reduced autonomy in health seeking contribute significantly. Integrated interventions addressing WASH practices, nutrition, and women's empowerment are urgently needed to reduce the burden of anemia in this setting.

248. Massawe, R.V. (2025). "Prothrombin time (PT) and activated Partial thromboplastin time (aPTT) among patients with type 2 diabetes attending the diabetes clinic at Mawenzi Regional Referral Hospital, Kilimanjaro region. Muhimbili University of Health and Allied Sciences

Abstract

Background: Type 2 Diabetes Mellitus (T2DM) is a major global health burden characterized by chronic hyperglycemia and insulin resistance. These metabolic abnormalities promote endothelial dysfunction and coagulation imbalance, predisposing patients to thrombotic events. Despite these

risks, routine coagulation profiling remains uncommon in diabetes care in Tanzania. **Objectives:** This study aimed to determine the proportion of T2DM patients with shortened Prothrombin Time (PT) and/or Activated Partial Thromboplastin Time (aPTT) and to identify clinical and demographic factors associated with these alterations among patients attending the diabetes clinic at Mawenzi Regional Referral Hospital (MRRH). **Methods:** A hospital-based cross-sectional study was conducted from April to May 2025 among 298 T2DM patients enrolled through convenience sampling. Sociodemographic and clinical data were obtained using structured questionnaires and patient records. Coagulation parameters (PT and aPTT) were measured using the HumaClot Duo analyzer, while glycemic control was assessed by Finecare™ HbA1c Rapid Quantitative Analyzer. Data were analyzed using Stata 17. Descriptive statistics summarized participant characteristics, and linear regression with robust standard errors was applied to determine factors associated with shortened PT and aPTT. A p-value **Results:** Among the 298 participants, 18.5% (55/298) exhibited shortened coagulation profiles, 77.5% (231/298) had normal profiles, and 4.0% (12/298) showed prolonged times. Separately, 28.2%(84/298) had shortened PT and 22.1%(66/298) had shortened aPTT. The mean platelet count was 284.9 $\times 10^9$ /L (SD = 77.3). In multivariable linear regression, poor glycemic control was significantly associated with lower aPTT values (β = -1.12, 95% CI: -1.89 to -0.35, p = 0.004). Participants with neuropathy (β = -8.20, 95% CI: -13.52 to -2.89, p = 0.003) and retinopathy (β = -6.59, 95% CI: -11.87 to -1.31, p = 0.015) also showed significantly shortened aPTT. Male sex exhibited a borderline relationship with reduced PT (β = -2.75, 95% CI: -5.56 to 0.05, p = 0.054). **Conclusion:** Nearly one-fifth of T2DM patients at MRRH demonstrated shortened coagulation profiles, with poor glycemic control and diabetic complications—particularly neuropathy and retinopathy—being significant predictors of reduced aPTT. These findings emphasize the need to integrate routine coagulation screening into diabetes management and to strengthen glycemic control measures to minimize hypercoagulable risks among T2DM patients.

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249. Maswe, A.(2025).Factors associated with the dietary quality of street-vended foods around primary schools in Dar es salaam region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Street-vended foods are a common and accessible source of nutrition for primary school children in urban areas of Tanzania, particularly in Dar es Salaam. These foods are often affordable and convenient, making them a popular choice during school hours. However, concerns have arisen regarding their dietary quality, as they are typically high in calories, fats, sugars, and salt, **while lacking essential nutrients such as protein, dietary fiber, iron, calcium, vitamin A, and vitamin C**, which are critical for the growth, development, and immune function of school-aged children. In addition, poor hygiene practices and unsanitary vending environments pose risks of food-borne illnesses. These factors contribute to the growing burden of non-communicable diseases and malnutrition among school-aged children. Despite their importance in supplementing school meals, there is limited scientific evidence on the dietary quality of street-vended foods around schools in Dar es Salaam. This study seeks to fill this gap by assessing the dietary quality of these foods to inform targeted interventions for improving child health and food safety practices.

Objective: To examine the factors associated with the dietary quality of street-vended foods around primary schools in the Dar es Salaam region. **Materials and Methods:** An analytical cross-sectional study was conducted between May and June 2025 to assess factors associated with the dietary quality of street-vended foods around primary schools in Dar es Salaam, Tanzania. A total of 190 street food vendors were selected through stratified random sampling across five districts (Ilala, Kinondoni, Temeke, Ubungo, and Kigamboni). Data were collected using questionnaires with structured questions and observational checklists. Questionnaires gathered information on vendor demographics, food safety knowledge, foods sold, and pricing. Observational checklists was used to assessed hygiene practices and food handling. Data were analyzed using IBM SPSS version 27, applying descriptive statistics, chi-square tests, and multivariate logistic regression to identify significant associations and predictors of dietary quality. **Results:** The study involved 190 street food vendors around primary schools in Dar es Salaam, the majority of whom were women over 30 years with primary education. Most vendors (83.6%) sold foods of good dietary quality, though over half (56.3%) lacked adequate nutrition knowledge. Good hygienic practices were observed in 86.8% of vendors. Statistical analysis revealed that good hygiene (AOR = 4.12, p = 0.025) and good nutrition knowledge (AOR = 4.80, p = 0.0286) were significantly associated with better dietary quality. Socio-demographic factors showed no significant influence, except for a modest effect from secondary education. **Conclusion and Recommendations:** This study demonstrates that most street food vendors operating around primary schools in Dar es Salaam provide meals that meet good dietary quality standards, with 83.6% of foods assessed as nutritionally adequate. Vendors' nutrition knowledge and hygienic practices were found to be significant determinants of higher dietary quality, underscoring their critical role in ensuring healthy food options for schoolchildren. However, gaps in nutrition knowledge among some vendors suggest the need for targeted interventions to sustain and improve these standards. The study also utilized modified assessment tools to enhance clarity and contextual relevance in evaluating dietary quality and vendor practices. To strengthen food safety and promote better nutrition among schoolchildren, the study recommends integrated actions including: targeted nutrition and hygiene training programs for vendors; local health authority support to improve food handling and sanitation; active engagement of schools in sensitizing and monitoring vendors; and continued research to assess the impact of such interventions. Collectively, these measures can contribute to improving the quality, safety, and nutritional value of street foods available to children in school environments.

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250. Materu, D. E. (2025). Prevalence and factors associated with low back pain among primary school pupils, Dar-es-salaam. Muhimbili University of Health and Allied Sciences

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Abstract

Background: Low back pain (LBP) is a prevalent musculoskeletal condition affecting 568 million globally. It is increasingly recognized as an experience among children and it has potential to re-occur during adulthood. Despite its significance, there is an insufficient epidemiological data on LBP among primary school pupils in Tanzania. **Objectives:** To determine the prevalence, associated factors, and health outcomes of Low back pain among primary school pupils in Dar es Salaam, Tanzania. **Material and Methods:** An analytical cross-sectional study was conducted in

May to June 2025 involving 312 primary school pupils from standard four and seven in Ilala Municipality, Dar es Salaam. Data were collected using the Back Pain and Body Posture Evaluation Instrument for Children and Adolescents (BackPEI-CA). Variables included socio-demographic characteristics, lifestyle factors, school related variables such as school bag weight, and carrying style. Descriptive statistics, Chi-square tests, and Poisson regression models were used for analysis, with a p-value <0.05 considered statistically significant. **Results:** The three-month prevalence of LBP was 58.7% (183/312), with 27.5% of affected pupils experiencing pain more than once per week. Multivariable Poisson regression identified participation in high intensity sports (Adjusted Risk Ratio [ARR]=1.35, p=0.012), studying in bed (ARR=1.28, p=0.031), and father's education level (ARR=1.20, p=0.045) as significant risk factors for LBP. Conversely, adequate sleeping duration (ARR=0.78, p=0.022) and inappropriate sitting posture at school (ARR=0.80, p=0.037) were protective. No significant association was found with school bag weight (ARR=1.01, p=0.807) or sex (ARR=1.11, p=0.265). **Conclusion:** LBP is common condition among primary school pupils driven by lifestyle and socio-economic factors. Therefore, public health interventions such as postural education, learning environmental designs, and guidelines on safe sports programs should be implemented to mitigate LBP and its impact on pupils' daily activities.

251. Mathayo, C. (2025). Forms Prevalence and Factors Associated with Intimate Partner Violence Among Pregnant Women, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Intimate partner violence (IPV) remains a major public health concern worldwide, causing both immediate and long-term effects for women's physical, psychological and reproductive health. Globally, IPV during pregnancy is estimated to occur in 3 – 13 % of pregnancies and has been linked to adverse maternal and neonatal outcomes. In Tanzania, findings from the 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS-MIS) primarily highlight IPV among all women aged 15–49 years. However, evidence specific to the forms and determinants of IPV among pregnant women remains limited, despite growing global recognition of its harmful effects during pregnancy. **Objective:** This study aimed to assess the forms, prevalence, and factors associated with IPV among pregnant women in Tanzania **Methodology:** A cross-sectional study based on secondary data analysis was done utilizing data from the 2022 Tanzania Demographic and Health Survey and Malaria Indicator Survey (TDHS MIS) on intimate partner violence (IPV) among pregnant women aged 15-49 years. The analysis used STATA version 18 focused on the forms, prevalence, and factors associated with IPV among women who were pregnant during the time of data collection of the TDHS-MIS. Descriptive statistics were used to determine the forms and prevalence of IPV, where percentages, median, and interquartile range were used to present the results. Sampling weights were applied for the complex survey design of the 2022 TDHS-MIS. The association between independent variables and IPV was assessed using multivariable modified Poisson regression analysis. The variable with, a p-value < 0.20, in bivariable analysis and that which considered to be conceptually important to the

study, were included in the multivariable model for further analysis and adjustment for potential confounders such as age of respondents, having marriage certificate and duration in union. A p-value of less than 0.05 was considered statistically significant. **Results:** The prevalence of IPV among pregnant women found to be 27.46% (95% CI 22.94% to 32.50%). Emotional IPV was the most common form, reported by 25.26% of respondents vi (95% CI: 20.09% - 31.25%), followed by sexual IPV at 11.04% (95% CI: 7.59 - 15.78%) and physical IPV at 11.01% (95% CI: 7.81% - 15.30%). Key factors that statistically associated with IPV prevalence were partner alcohol use (APR: 2.15; 95% CI: 1.26 – 3.64), partner who had many other wives (APR: 1.78; 95% CI: 1.06 – 3.00), and longer duration in union mainly 5 to 9 years (APR: 2.26; 95% CI: 1.04 – 4.93). **Conclusion:** Intimate partner violence (IPV) affects nearly one in four pregnant women in Tanzania, with emotional violence being the most common form. Major factors that increased the prevalence of IPV were partner alcohol use, partners who had other wives, and longer union duration. The ministry and local authorities (regional and Council health management team) should strengthen IPV screening and support services in maternal health care by integrating them into routine ANC services. This integration would enable healthcare providers to identify and address IPV early, and facilitate timely support and interventions that may otherwise be missed in outside ANC settings. Additionally, behavior change program should be implemented for partners in long-term unions, those engaged in alcohol consumption, and those in polygamous relationships to help prevent the cycle of violence.

252. Matipa, T. (2025). Evaluation of the newborn screening for sickle cell disease program implementation in the selected hospitals in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sickle cell disease (SCD) is a major public health concern in Tanzania, with approximately 11,000 affected infants born annually. Despite the proven effectiveness of newborn screening (NBS) in reducing early mortality from SCD, implementation in Tanzania remains limited to pilot programs at facilities such as Temeke and Amana Regional Referral Hospitals. While these pilots provide an opportunity to improve early diagnosis and linkage to care, little is known about their operational performance, challenges, and feasibility for national scale-up. This evidence gap limits the ability of policymakers to design effective strategies for expanding NBS services in the country. **Study Objective:** This study aimed to evaluate the implementation of NBS for SCD program in Temeke and Amana hospitals over two years, from January 2022 to December 2024. **Materials and Methods:** A mixed-methods process evaluation was conducted at Temeke and Amana Regional Referral Hospitals in Dar es Salaam, Tanzania. Quantitative data on newborn screening outcomes were retrospectively extracted from hospital registries and REDCap records from January 2022 to December 2024, covering all newborns delivered and those who were screened for SCD. Qualitative data were collected through seventeen (17) Key Informant Interviews with healthcare workers directly involved in screening and follow-up, purposively selected to capture diverse roles. Quantitative data were analyzed using excel, while qualitative transcripts were thematically analyzed to explore operational factors influencing implementation.

Results: A total of 10,711 newborns were screened across the two hospitals. Enrolment of infants diagnosed with SCD into comprehensive care declined substantially over time, from 65.6% to 10.5% at Temeke RRH, while Amana RRH recorded no enrolments beyond the first year of implementation. Qualitative findings highlighted facilitators such as maternal awareness, interdepartmental collaboration, and availability of trained staff. However, implementation was hindered by lack of refresher training, delayed staff incentives, shortages of supplies, and parental hesitancy influenced by cultural beliefs. **Conclusion:** This evaluation revealed a marked decline in enrolment of newborns with SCD into comprehensive care, alongside operational barriers that undermined program continuity. While trained and committed staff and interdepartmental collaboration supported initial implementation, sustainability was constrained by inadequate refresher training, delayed incentives, supply shortages, and parental hesitancy. Addressing these specific gaps requires regular capacity-building for staff, reliable supply chain systems, timely provision of incentives, and culturally sensitive community education. Strengthening these areas is essential to improve enrolment and continuity of care, and to inform decisions on the national scale-up of NBS for SCD in Tanzania.

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253. Maureen, A.R. (2025). Assessment of Knowledge, Practices, and Associated Factors in the Management of Urinary Tract Infections Among Medical Doctors in Dar-Es-Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Urinary tract Infections (UTI) present a significant burden with over 150 million cases and burden the health care system largely due to inadequate sanitation services, healthcare disparities, sub optimal diagnostic infrastructure. It has been reported to mostly affect women than men due to anatomical differences. **Objective:** The study assessed the level of knowledge, practices and associated factors in the management of UTI's among medical doctors in Dar es salaam. **Materials and Methods:** We adopted a hospital-based cross-sectional analytical study design conducted in two public and two private hospitals in Dar es salaam Tanzania. Data were collected from 122 medical doctors were selected by stratified cluster random sampling including Intern doctors, general practitioners and specialists, through a closed-ended structured questionnaire, Data were analysed using Statistical Package for the Social Science (SPSS) version 15. All variables were expressed as frequencies and percentages, employing T-tests for continuous variables and Chi-square tests for categorical variables. A Poisson's regression analysis model was used for multivariable analysis. **Results:** The findings revealed that less than half of the respondents 45.1% had adequate knowledge of UTI management, while 71.3% demonstrated poor clinical practices. Knowledge gaps were especially prominent in public hospitals, while better

knowledge was observed in private settings like Private 1 hospital (only 38.5% with inadequate knowledge). Poor practices were most noticeable at Private 2 and Public 2 hospitals (85.7% each), compared to only 30.8% at Private 1 Hospital. No statistical significance was found between the demographic variables and knowledge levels although work experience had a close level of significance (p value=0.054) suggesting it's possible link to knowledge levels and in multivariable analysis, age remained the only factor significantly associated with knowledge. Significance associations was present between factors such as work facility, access to standard treatment guideline (p value=0.048). **Conclusion and recommendations:** The knowledge of UTI management among medical doctors in Dar es Salaam is still poor and is significantly influenced by institutional and systemic (organizational) factors, rather than individual demographics like age or gender. While knowledge levels were poor, actual clinical practices were largely suboptimal, especially in public hospitals, emphasizing disparities in training, resources, and access to treatment guidelines. These findings suggest that improving UTI care requires targeted interventions such as strengthening institutional training and guideline implementation, improving access to updated clinical guidelines and diagnostics tools and address structural and resource inequities between hospitals.

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254. Mbarouk, M. A, (2025). Incidence and outcomes of critical illness and associated factors at emergency department of Mnazi Mmoja Hospital in Zanzibar from January to December 2024. Muhimbili university of health and Allied Science.

Abstract

Background: Critical illness is a life-threatening condition resulting from acute disease, injury, adverse environmental influence, poisoning, surgery, or decompensation of chronic disease. The study aims to determine the incidence and outcome of critical illness and associated factors at the emergency department of MMH. Methodology: This retrospective cohort study was conducted at Mnazi Mmoja Hospital Emergency Department in Zanzibar, involving adult patients who attended between January and December 2024. Data were extracted from both electronic and paper records using a structured form. Key variables included age, sex, triage category, critical interventions, mode of arrival, and outcomes. Data were analyzed using SPSS version 20, with descriptive statistics and Chi-square tests. Logistic regression, bivariate and multivariate analysis were used to demonstrate associated factors with the outcome. **Results:** During the study period (January to December 2024), a total of 912 new cases of critically ill patients were identified among 19280 individuals at risk, resulting in a cumulative incidence of 4.73 per 1000 patients with 95% confidence interval of 4.43 to 5.03 per 1000. The outcome of critically ill patients, the overall mortality rate among these patients was 5.9%. Age AOR (95% CI) 0.14(0.05-0.40) P-value 0.000, Comorbidities AOR (95% CI) 2.98(1.36-6.54) P-value 0.006, and Airway management AOR (95% CI) 5.88(2.87-12.03) P-value 0.000, remained independently associated with outcome of critically ill patients at the emergency department of Mnazi Mmoja Hospital. **Conclusion:** The number of critically ill patients was relatively slight lower, but mortality was slightly higher. The outcome was significantly associated with age, presence of comorbidities, and airway management. Recommendation: The findings highlight the need for an age and comorbidity-specific care pathway to improve the care of critically ill patients. The management of Mnazi

Mmoja Hospital should focus on the allocation of resources, including staff, equipment, supplies, and emergency drugs at the emergency services, as findings demonstrate high mortality at the emergency department.

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255. Mbaruku, V.W. (2025). Prevalence **of iron deficiency anemia and associated factors among children with cerebral palsy attending Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.**

Abstract

Background: The World Health Organization estimates that approximately one-quarter of the global population is affected by anemia, with iron deficiency accounting for about 50% of cases. In Tanzania, the demographic and health survey reports a high prevalence of childhood anemia at 59%, with iron deficiency being the leading cause. Children with cerebral palsy are particularly vulnerable due to feeding difficulties resulting from impaired motor function, leading to malnutrition and deficiencies in essential micronutrients such as iron. **Objective:** To determine the prevalence of iron deficiency anemia and associated factors among children with cerebral palsy at Muhimbili National Hospital. **Methods:** This was a hospital-based cross-sectional study conducted at the paediatric neurology clinic of Muhimbili National Hospital over five months, from Nov 2024 to March 2025. A total of 238 children attending the clinic were recruited to participate in the study. Blood samples were collected for hematological and biochemical analyses, including a complete blood count, serum ferritin levels, and C-reactive protein levels to validate the ferritin results. Data on socio-demographic characteristics, clinical history, and laboratory findings were obtained using a standardized semi-structured questionnaire. Data analysis: Data were analyzed using SPSS version 27 software. Continuous variables were summarized using means and standard deviations or medians and interquartile ranges (IQR), depending on the distribution. Categorical variables were summarized using frequencies and proportions. The results were presented in the form of tables and charts. Chi-square test was used to assess associations between categorical dependent and independent variables. Logistic regression analysis was performed to identify the factors associated with iron deficiency anaemia. A p-value of less than 0.05 was considered statistically significant. **Results:** A total of 238 children with cerebral palsy (CP) were enrolled in the study. The median age of the study population was 3.8 years (IQR: 2.0–6.0). Males were 57.6%, and the male-to-female ratio was 1.4:1. Most caregivers had at least a primary education (98.7%), with 41.6% having completed secondary education. The prevalence of anaemia and iron deficiency anaemia (IDA) were 60.9% and 28.2%, respectively. Among those with IDA, the majority had mild and moderate anaemia (49.3% and 47.8%, respectively). Severe anemia was found in only 3.0% of the study population. Spastic CP was the most common subtype, seen in 58.0% of participants, and 61.3% had severe motor impairment (GMFCS level V). In multivariable logistic regression analysis, low dietary diversity was the only factor independently associated with IDA (an OR: 5.96, 95% CI: 3.11–11.40, $p < 0.001$). Other factors, including age, sex, birth weight, caregiver education level, and CP subtype, were not significantly associated with IDA. **Conclusion:** The study showed a substantial burden of IDA and anemia among children with CP, primarily of mild to moderate severity. Inadequate dietary diversity was the sole independent factor associated with IDA, emphasizing the importance of

nutritional interventions in this high-risk group. No significant associations were observed between IDA and other clinical or socio-demographic characteristics in the adjusted analysis. **Recommendations:** Routine screening for iron deficiency anemia should be integrated into standard care for children with CP who exhibit inadequate dietary diversity. Interventions should focus on enhancing dietary diversity and providing targeted nutritional education to caregivers.

256. Mbasa, H. M. (2025). Factors influencing outcomes of open ureteroneocystostomy at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Ureteroneocystostomy (UNC) is a key procedure in urological surgery, especially for vesicoureteral reflux and ureteral trauma. At Muhimbili National Hospital (MNH), it makes up 58% of ureteral repair surgeries, yet data on outcomes and complications such as anastomotic failure and urine extravasation are lacking. Addressing this gap is crucial for improving surgical techniques and patient management. **Objectives:** To determine the patients' clinical profiles, surgical outcomes, and factors influencing the success of open UNC procedures. **Methodology:** A hospital-based retrospective cohort study was conducted at Muhimbili National Hospital, focusing on patients who underwent ureteroneocystostomy from January 2020 to December 2024. Data was collected consecutively using a structured tool. Analysis was performed using IBM SPSS version 27, with descriptive statistics summarizing clinic-demography, while chi-square tests and logistic regression examined surgical outcomes and factors influencing success. **Results:** A total of 137 patients who underwent open UNC surgery were included. The mean age of patients was 38 (SD: 16.2) years. Most of them were female, 81 (59.1), with a female-to-male ratio of 1.5:1. The primary surgical indications for UNC were distal ureteric stone/stenosis 72(52.6%), followed by postoperative ureteric injury 34 (34.3%). Postoperative outcomes showed that 128 (93.4%) of patients experienced clinical improvement. However, 53 (38.7%) had postoperative complications, the most common being fever 27, 19.7%) and surgical site infection 20 (14.6%). Postoperative blood transfusion was the independent predictor of complications, with patients requiring transfusion having significantly higher odds of complications (AOR = 38.9). **Conclusion:** The majority of patients undergoing UNC were middle-aged females, with distal ureteric stone/stenosis being the most common indication. While most patients showed clinical improvement postoperatively, a significant proportion experienced complication, particularly fever and surgical site infection. The need for a postoperative blood transfusion was identified as an independent predictor of complications, highlighting the importance of careful management in these cases to reduce the risk of adverse outcomes.

Keywords: *Ureteroneocystostomy, ureteric stone, ureteric stenosis*

257. Mbatta, M. (2025). Evaluation of the workers' compensation fund process among employers in the public healthcare sector: A case of Dar es salaam Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Every day, thousands of workers die globally, and a hundred thousand suffer permanent disabling injuries, due to work-related accidents with low-income countries being the most affected. Workers Compensation Fund (WCF) is a social security scheme established by section 5 of the Workers Compensation Act and applies to all employers and employees in mainland Tanzania. WCF was established in 2015 but started receiving worker's compensation claims in 2016. **Objective:** To assess the employer's understanding, experience, and perception of the workers' compensation fund process using a case study of the Dar es Salaam region. **Materials and Methods:** The study employed a phenomenological study design using a qualitative approach, whereby a purposive sampling technique was used to select key informants for the interviews on the understanding, experience and perception of the employers towards the worker's compensation fund process. A total of participants including Human Resource managers, Health Secretary, and legal officers was interviewed by the researcher using an interview guide with semi-structured questions. Inductive thematic analysis was used to analyze the transcripts while NVivo software version 12.0 aided in arranging codes, subthemes and themes that were identified. **Results:** The study reveals that employer experiences and perceptions are significantly influenced by their understanding of the WCF processes. Findings from this research evolved into three main themes with corresponding subthemes. The first theme, Limited Understanding of the WCF Process, emerged due to insufficient training and inadequate knowledge of guidelines and employer responsibilities. The second theme, challanges in Implementation, highlighted challenges such as technical challanges with the WCF portal, prolonged waiting time, limited administrative support and limited of transparency. The third theme, Employers' Perceptions of the WCF Process, pointed to issues like, payment timeliness, perceived fairness and employers' suggestions **Conclusion:** This study reveals that although employers are aware of their responsibilities in the WCF claims preparation and submission procedure, limited understanding and challenges in implementing the WCF process negatively affect the WCF process in ensuring timely compensation to workers. **Recommendations**: The study recommends that councils implement regular refresher training and capacity-building for staff managing compensation to improve claims handling. Strengthening communication between councils and WCF offices is essential to resolve technical and administrative challenges. Enhanced collaboration through stakeholder engagement can improve system efficiency. Additionally, awareness campaigns should educate employers and employees on WCF procedures to reduce filing errors and delays.

258. Mbeya, J.T. (2025). Prevalence, associated factors, and initial visual outcome of ocular injury among paediatric patients attending the emergency department at Muhimbili National Hospital. Muhimbili university of health and Allied Science.

Abstract

Background: Ocular injury is among the major causes of visual impairment, plays an important role in the development of blindness, and is a significant cause of preventable monocular blindness. About 55 million injuries occur worldwide each year due to ocular injury, of which 1.6

million result in blindness. Children are more prone to eye injuries because of immature motor abilities, relative lack of judgment, hazardous play, innate curiosity, and a tendency to imitate without considering the consequences. Understanding the prevalence, associated factors, and outcomes of ocular injuries is key in the formulation of preventive strategies, as a result of limited data at EMD in Tanzania; hence, preventive strategies are being enforced to reduce morbidity and prevent long-term visual impairment but they must be properly designed while taking the results of our resource-limited setting into account. Objective: To determine the prevalence, associated factors of abnormal visual outcome, and initial visual outcomes of ocular injury among paediatric patients attending the Emergency Department at Muhimbili National Hospital between January 2025 and April 2025. **Methodology:** This hospital-based cross-sectional analytical study was carried out among 94 paediatric patients aged 29 days to 14 years presenting with ocular injuries. Eligible participants were identified using ICD-10 codes (S05) and triage keywords. Data were collected using a pre-structured questionnaire, and every patient underwent a comprehensive ophthalmologic evaluation. Ocular injuries were classified using Birmingham Eye Trauma Terminology. Abnormal visual outcome was defined as any level of visual impairment. Data were collected using the Redcap online tool and analysed using the Statistical Package for Social Sciences version 25. Descriptive statistics were used to determine prevalence and initial visual outcome, while chi-square tests and multivariate regression assessed associations between variables and initial visual outcome. Results: Out of 180 paediatric trauma patients who attended the Emergency Department at Muhimbili National Hospital between January and April 2025, 94 patients had ocular injuries and were included in this study. The prevalence of ocular injuries among paediatric trauma patients was 49(52.2%). The mean age was 4 years, and (56)9.6% were male. The majority of guardians had a basic level of education. The majority of injuries occurred in urban which constituted 69(73.4%) of all cases. About 76(80.9%) of ocular injuries occurred at home. The type of injury mechanism was predominantly closed globe injuries involving 65(69.2%) of participants, with the cornea being the most affected part of the eye. The greatest number of cases were managed with non-surgical intervention 66(70.2%) Abnormal visual outcomes were independently associated with blunt-related injuries (aPR=0.38, p=0.023, CI 0.18-0.62), stone-related injury (aPR=2.67, p=0.014, CI 1.04– 2.63), and presence of complications (aPR=1.75, p=0.004, CI 1.59– 3.17). At initial Emergency Department presentation, almost half of the injured eyes had abnormal visual outcomes. **Conclusion:** This study highlights a high prevalence of ocular injuries among paediatric trauma patients in an emergency care setting. Abnormal visual outcome was associated with blunt-related injuries, stone-related injuries, and the presence of complications at initial presentation. The findings reveal that nearly half of the affected patients experienced abnormal visual outcomes, indicating long-term visual impairment.

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259. Mbise, N. (2025). Prevalence of Undiagnosed Hypertension as a Diagnosis Associated with Gynaecological Conditions Among Women Attending Gynaecological Clinic at Kilimanjaro Christian Medical Centre. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Undiagnosed Hypertension poses significant health risks, particularly in women with gynecological conditions. While traditional risk factors apply universally, some sex-specific factors deserve attention. Early menarche, gynecological conditions, and other diseases have been associated with a higher risk of hypertension in women. **Aim of the study:** To assess the Prevalence of undiagnosed Hypertension among women with gynecological conditions at the outpatient Gynecology clinic of KCMC, Tanzania**. Methodology**: The study deployed a cross-sectional design; 144 consenting women in gynecology clinics were enrolled, and four repeated ambulatory blood pressure measurements were taken. Data collected included a basic structured questionnaire on general demographics, obstetrics and gynecology history was taken. **Results:** The Prevalence of undiagnosed Hypertension among women attending the outpatient gynecology clinic at KCMC was 25.7% (95% CI; 19.3 – 33.4) (n=37). Undiagnosed hypertension was associated with older age and attainment of menopause> 44 years (AOR=8.56, 95% CI: 1.02 – 10.75**),** being obese (AOR=2.5, 95% CI: 1.65 – 38.5, and family history of hypertension and cardiovascular death (AOR=11.3, 95% CI: 9.32 – 13.63), (AOR=13.1, 95% CI: 3.57 – 29.9) respectively. Women with an income-generating activity that involved walking (AOR=0.01, 95% CI: 0.00 – 0.27) were protected from hypertension. **Conclusion:** Undiagnosed hypertension was associated with obesity, family history of hypertension and cardiovascular death, irrespective of gynecological condition. The lack of significant statistical association is likely due to the small sample size to detect the difference, the low precision of the estimate, and the fact that the study could not ascertain the diagnoses objectively. Women with income-associated daily long walks were protected from hypertension. **Keywords**: Gynecological conditions, undiagnosed hypertension, repeated blood pressure measurement; sex-specific risk factors, Ambulatory Blood Pressure Measurement.

260. Mbosoli, G.N. (2025). Prevalence of depression, anxiety and associated factors among colorectal cancer patients at ocean road cancer institute

Abstract

Background Colorectal cancer (CRC) is among the most commonly diagnosed cancers in both men and women, ranking fourth globally, according to the Global Cancer Observatory 2022. While advances in early detection and treatment have improved survival rates, CRC remains the fifth leading cause of cancer-related deaths worldwide. Mental illness, particularly depression and anxiety, is a major contributor to disability and mortality. Cancer patients, including those with CRC, often experience psychological distress that negatively affects their quality of life. Depression and anxiety are among the most common mental health disorders in this population, affecting approximately 10% and 20% of cancer patients, respectively which in turn leads to reducing treatment adherence, impairing immune function, increasing symptom burden, lowering quality of life, and potentially shortening survival. **Objective** To determine the prevalence of depression and anxiety and their associated factors among colorectal cancer patients at Ocean Road Cancer Institute (ORCI). **Methodology** This hospital-based cross-sectional study included 122 patients with histologically confirmed colorectal cancer. Data on socio-demographic and clinical characteristics were collected via structured interviews. Depression was measured using the Patient Health Questionnaire (PHQ-9), and anxiety using the Generalized Anxiety Disorder

scale (GAD7). Data were analyzed using SPSS version 25. Descriptive statistics were used to summarize participant characteristics, while multivariable logistic regression identified factors associated with depression and anxiety. A p-value 0.05 was considered statistically significant. **Results** The prevalence of depression and anxiety among CRC patients was 34% and 49.2%, respectively. Most cases were mild in severity (78.6% for depression and 95% for anxiety), with no cases of severe symptoms reported. Factors significantly associated with depression included age under 50 years, post-treatment status, higher education level, and stage 4 disease. Anxiety was more prevalent among females, self-employed individuals, insured patients, those with stage 3 disease, and those who had not started treatment. **Conclusion** Routine psychological screening should be incorporated into CRC patient care, especially for high-risk groups. Early identification and intervention can improve patient well-being and outcomes.

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261. Mboya, A.A. (2025). Estimating The Proportion of Lives Saved by Dialysis and Associated Factors Among Patients with End-Stage Kidney Diseases at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Survival benefit from hemodialysis in end-stage kidney disease (ESKD) is influenced by socio-demographic, clinical, and psychosocial factors. However, evidence for the proportion of patients' lives saved by dialysis in low-income countries is lacking, especially in Tanzania. **Broad Objective:** To estimate the proportion of lives saved by dialysis and associated factors among patients with end-stage kidney disease at Muhimbili National Hospital. Methods: Among 270 ESKD patients on maintenance hemodialysis, we collected data on education, employment, vascular access type, dialysis adequacy, mental health, and willingness to continu therapy. Multivariable logistic regression estimated adjusted odds ratios (AOR) for "life saved" outcomes. **Results:** A total of 270 patients were included in this study, with the majority aged between 55 and 74 years (43.7%). Only 130 (48.1%) participants had secondary education. Nearly three-quarters (196, 72.6%) of participants were living in an urban area. Only 180 (66.7%) of respondents had health insurance. Lower education (secondary versus higher education: AOR = 2.39, p = .032) and active employment (AOR = 2.63, p = .038) were linked to reduced survival benefits. Use of temporary central venous catheters (CVCs) was associated with lower odds of benefit compared to arteriovenous fistulas (AVFs) (AOR = 0.80, p < 0.001). Better post-dialysis mental health (AOR = 3.55, p = .002) and willingness to continue long-term dialysis (AOR = 0.09, p = .010) significantly lowered survival odds among patients on maintenance dialysis. **Conclusions:** The study indicates that many patients on hemodialysis do not benefit from treatment due to various factors. Education, employment, vascular access, and psychosocial well-being are key elements affecting dialysis success. Integrated interventions that enhance health literacy, access to AVFs, and mental health support are crucial. The success of dialysis depends not only on clinical measures but also on the patient's mindset. Therefore, employed patients need psychological support to manage daily work stress, leading to improved health outcomes on dialysis.

262. Mboya, T. (2025). Healthcare Workers' Practices and Experiences in Implementing Antimicrobial Stewardship at Newly Upgraded Government Hospitals in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Antimicrobial resistance (AMR) is a growing public health concern globally and particularly acute in low-resource settings. Despite Tanzania's 2017 National Action Plan on AMR, which promoted hospital policies and healthcare worker training, effective implementation of Antimicrobial Stewardship (AMS) programs remains inconsistent. This study explored healthcare workers' practices, experiences, and barriers in implementing AMS across three recently upgraded government hospitals in Dar es Salaam. **Methods:** A mixed-methods approach was employed. Qualitative data were collected through semi structured interviews with 18 purposively selected healthcare workers, including doctors, nurses, pharmacists, laboratory scientists, and administrators. Additionally, a WHO Point Prevalence Survey (PPS) was conducted at Sinza Government Hospital to assess the adherence of antimicrobial prescriptions to AMS, national, and local guidelines. **Results:** The study revealed substantial variation in AMS knowledge and practice among healthcare workers. Strategies such as prescription audits, use of prescribing checklists, and interprofessional collaboration—especially involving pharmacists—were identified as enablers of AMS. However, persistent barriers included limited training, lack of hospital wide policies, inadequate diagnostic tools, poor communication, and staff shortages. The PPS findings showed that 100% of prescriptions were empirical, microbiological testing was absent, and 42% of prescriptions deviated from national or AMS guidelines— particularly due to overuse of prophylactic antibiotics and prolonged durations. **Conclusion:** Despite healthcare workers' awareness and willingness to support AMS, implementation remains undermined by systemic and institutional challenges. Strengthening diagnostic infrastructure, developing clear AMS protocols, improving interprofessional collaboration, and providing continuous staff training are essential steps toward improving antimicrobial stewardship and combating AMR in Tanzanian public hospitals. **Keywords:** Antimicrobial stewardship (AMS); Antimicrobial resistance (AMR); Healthcare workers; Prescribing practices; Point Prevalence Survey (PPS); Tanzania.

263. Mbughuni, C.S. (2025). The economic cost of uterotonics for prevention of postpartum hemorrhage at a primary health care facility (PHC) in Dar es salaam Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Postpartum hemorrhage (PPH) is a critical maternal health complication, especially in low- and middle-income countries like Tanzania, where it significantly contributes to maternal morbidity and mortality. The World Health Organization recommends uterotonics, particularly oxytocin, as a standard practice to prevent excessive bleeding during and after childbirth. However, the economic implications of implementing these medications in primary health care facilities remain largely underexplored, necessitating an analysis of both direct and indirect costs associated with their usage. **Objective:** To determine the economic cost of uterotronics use for

Prevention of Post Partum Hemorrhage (PPH) at a Primary Health Care Facility (PHC) in Dar es Salaam Region **Materials & Methods:** A cross-sectional study design was conducted to evaluate the economic costs associated with uterotonics use in preventing postpartum hemorrhage (PPH) at selected primary health care facilities in Dar es Salaam, Tanzania. Data collection was conducted in Ilala District, involving healthcare providers through a combination of quantitative surveys and qualitative interviews that focused on direct and indirect costs, cost drivers, and unit costs related to uterotonic administration. To quantify these costs and identify influencing factors, statistical analyses were performed using inferential statistics with 95% confidence intervals, while data collection tools were pre-tested for validity and reliability through pilot testing. Furthermore, data was securely managed, stored and analyzed electronically using Microsoft Excel. **Results:** total cost of providing uterotonics for postpartum hemorrhage (PPH) prevention across three primary health care facilities was USD 177,696.43, with direct costs accounting for 92%—pr imarily driven by medicines (46%), equipment (40%), and personnel (5%). Chanika Hospital contributed the highest share (68%) of the total cost due to higher service volume, while Tabata incurred the least. The average cost per PPH case was USD 15.16, varying by facility, with Buguruni having the highest unit cost (USD 25.10) and Tabata the lowest (USD 7.84). Sensitivity analysis confirmed medicines as the largest cost driver, showing notable variation across cost scenarios. vi **Conclusion:** This study demonstrates that most of the costs for administering uterotonics in PPH prevention are driven by direct expenses particularly medicines and personnel underscoring the resource-intensive nature of maternal health services. Cost variations across facilities reflect differences in service volume, operational efficiency, and infrastructure, with larger facilities like Chanika Hospital benefiting from economies of scale. In contrast, smaller or mid-sized centers face higher per-care costs. These findings have important implications for budgeting, strategic scale-up, and promoting equitable access to PPH prevention across different levels of the health system. **Recommendation:** The study recommends targeted actions for health practitioners, policymakers, and researchers to enhance the cost-effectiveness of PPH prevention using uterotonics. For practitioners, improving drug use efficiency, task allocation, and staff training can reduce major cost drivers. Policymakers are urged to allocate resources based on facility volume and efficiency, invest in cost-saving infrastructure, and integrate cost analysis into national maternal health planning. Researchers should explore longitudinal impacts of policy and operational changes on costs, compare cost-effectiveness of uterotonic options, and assess patient-level economic burdens. These strategies aim to optimize service delivery while ensuring equitable and high-quality maternal care.

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264. Mbwambo, H. (2025). The association between H. Pylori infection and preeclampsia among pregnant women at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Preeclampsia (PE) is a major cause of maternal and perinatal morbidity and mortality, particularly in low-resource settings. Although some evidence indicates a possible link

between Helicobacter pylori infection and the development of preeclampsia, no studies have explored this relationship within mainland Tanzania. **Objectives:** To determine the association between pre-eclampsia and Helicobacter pylori infection among pregnant women at Muhimbili National Hospital (MNH). **Materials and Methods:** A hospital-based case-control study was conducted at MNH from September to November 2024. A total of 220 pregnant women (111 with preeclampsia and 109 normotensive controls), ≥20 weeks of gestation, were enrolled. Data collected included socio-demographic information, obstetric history, clinical signs and symptoms, laboratory investigations (including hemoglobin, platelet count, serum creatinine, urea, liver enzymes), and Doppler ultrasound findings. Helicobacter pylori infection was diagnosed using a stool antigen test. Statistical analysis was performed using SPSS v25, and the association between H. pylori infection and preeclampsia was assessed using chi-square tests and logistic regression to calculate odds ratios and p-values. **Results:** A total of 220 pregnant women (111 with PE and 109 normotensive controls); H. pylori infection was significantly more prevalent in preeclamptic women than in normotensive controls (68.6% vs. 31.4%, $p = 0.019$). Among preeclamptic women, those infected had higher systolic ($p = 0.011$) and diastolic blood pressure ($p = 0.010$), elevated serum creatinine ($p < 0.001$), and more severe intrauterine growth restriction ($p = 0.002$). They also had lower platelet counts ($p = 0.007$) and higher serum urea ($p = 0.036$). Doppler findings did not differ significantly between infected and uninfected preeclamptic women ($p=0.115$). **Conclusion:** H. pylori infection is linked to preeclampsia and worsened maternal-fetal outcomes, suggesting it may be a modifiable risk factor. Screening and treatment in high-risk pregnancies could be beneficial, but further research is needed to confirm these findings and understand the mechanisms involved.

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265. Mbwasi, P. R. (2025). Factors associated with the adherence to CT and MRI report recommendations at Muhimbili National Hospital Upanga. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The radiology report may have various recommendations, including Recommendation for additional imaging (RAI), laboratory investigation, consultation with multiple subspecialties, and non-invasive procedures. Failure to adhere to these recommendations imposes a serious breakdown of the patient's diagnosis process. Aim of the study was to evaluate the proportion of adherence to CT and MRI report recommendations at MNH, Upanga. **Objective:** To determine factors associated with the adherence to CT and MRI report recommendations at Muhimbili National Hospital-Upanga **Methods:** A hospital-based retrospective cohort study was conducted where all CT and MRI reports generated in April 2024 were reviewed. Recommendations were followed up for a duration of 1 year to ascertain whether the recommendation was executed. SPSS version 25 was used for analysis. Chi-square was used to check for associations between the variables and Bivariate logistic regression was used to determine the true association of variable where statistical significance was set at a p-value of less than 0.05. Budget: The total expenditure for this study amounted to Tsh 1,463,000.00, which was funded by the Tanzania MoH. **Results:** 237 recommendations from CT and MRI reports were

analyzed. (56.5%) of the participants were found in the outpatient category. The majority of the recommendations were RAI 106 (44.7%), followed by laboratory investigations, 76 (32%). A total of 115 (51.5%) recommendations were executed. RAI and laboratory investigations, were statistically found to be associated with adherence to recommendation.

266. Mbwilo, J. (2025). Nutritional and dietary factors associated with glycemic control among people with type 2 diabetes mellitus attending clinics in Pwani Region. Muhimbili University of Health and Allied Sciences

Abstract

Background: Type 2 diabetes mellitus (T2DM) is among the four major public health concerns globally, with an unprecedented growing burden in Tanzania, like in other low and middle-income countries. In its management, attaining optimal glycemic control is one of the main treatment goals. However, in Tanzania, a large proportion of people living with T2DM struggle with poor glycemic control. Nutritional factors are associated with glycemic control globally. With an ongoing nutrition transition, new dietary approaches to T2DM management need to be emphasized in clinical management and nutritional counselling. Yet, there is scant information on nutrition and dietary factors associated with glycemic control in Tanzania. **Objective:** This study aims to determine the proportion, nutritional and dietary factors associated with glycemic control among people with type 2 diabetes attending diabetes clinics in Pwani region. **Methodology:** A Facility-based cross-sectional study using a quantitative approach was conducted. A two-stage stratified random sampling technique was employed to select 420 adults living with Type 2 Diabetes Mellitus attending outpatient clinics in Pwani region. Data was collected electronically using Kobo toolbox and analyzed using Stata version 17. Descriptive statistics were used to describe both the proportion and characteristics of the study participants, results presented in frequency distribution tables and narratives. Association between nutritional and dietary factors with glycemic control status was first determined by bivariable robust (modified) Poisson regression analysis and later factors with associations reaching $p<0.2$ were inserted into a multivariable robust (modified) Poisson regression model to determine their independent association with glycemic control status. A p-value of ≤ 0.05 was considered a statistically significant association. **Results:** Poor glycemic control was prevalent among 83.4% of people living with Type 2 Diabetes and attending outpatient clinics in Pwani region. Independent factors associated with poor glycemic control included meal spacing whereby, individuals who spaced one meal from the other in a 3-5 hours time interval, had 14% increased risk for poor glycemic control compared to those who spaced meals in 6 hours or more time interval (aPR 1.14(1.06-1.23),95% CI, P <0.001). Skipping breakfast was also associated with an increased likelihood of poor glycemic control by 5% compared to breakfast consumption (aPR 1.05(1.01-1.08), 95% CI, P=0.005). Overweight and obesity were associated with poor glycemic control. For example, indivisuals with overweight had a 12% higher risk of poor glycemic control compared to normal BMI (aPR 1.12(1.06-1.19), 95% CI, P-<0.001); and those with obesity presented with a 13% higher risk of poor glycemic control compared to those with normal BMI (aPR 1.13(1.07-1.2), 95% CI, P<0.001). Finally, dietary pattern was also

associated with poor glycemic control as follows: carbohydrate-starchy dietary pattern associated with 2% increased likelihood of developing poor glycemic control (aPR 1.02(1-1.03), 95% CI, P<0.001), while Lean protein dietary pattern found to be associated with 1% decreased risk for poor glycemic control (0.99 (0.98-1), 95% CI, P=0.037). **Conclusion:** More than four in five T2DM adults attending diabetes clinics in Pwani region succumb to poor glycemic control. Such poor control of diabetes calls for more clinical and lifestyle interventions targeting adults with T2DM with overweight or obesity, with poor feeding patterns, especially those who skip breakfast, have a 3–5-hour meal spacing, and a refined-carbohydrate-starchy dietary pattern. Promotion of a lean protein dietary pattern should be encouraged for better management of type 2 diabetes. Addressing the burden of diabetes and ensuring glycemic control among patients living with the disease needs collaborative efforts in developing context-specific T2DM dietary management guidelines, establish comprehensive nutrition services in lower-level facilities and proper monitoring of state of glycemic control among individuals with T2DM.

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267. Mfuria, G.A. (2025). Perspectives on Childbirth Companionship among Postnatal Women at Muhimbili National Hospital, Dar Es Salaam, Tanzania. Muhimbili University Health and Allied Sciences.

Abstract

Background: Birth companionship is considered a crucial aspect of respectful maternity care, offering continuous emotional, physical, and psychological support to women during labor and childbirth. Despite the advantages, such as increased maternal satisfaction, shorter labor duration, and improved neonatal outcomes, its implementation remains inconsistent in numerous low-resource settings, including Tanzania. **Aim:** This study aimed to explore the perspectives of postnatal women on childbirth companionship at Muhimbili National Hospital (MNH), focusing on their desires, preferred companion of choice, and perceived benefits of having a companion during labor and delivery. **Methods:** A qualitative exploratory design was employed. Data were collected from ten postnatal women using purposive sampling and semi-structured in-depth interviews. Thematic analysis was conducted using both deductive and inductive approaches to identify emerging themes related to childbirth companionship. **Results:** Four major themes emerged: (1) Enhancing the Childbirth Experience through Holistic Companionship and Support, (2) The Need for Trusted Companionship During Childbirth, (3) Barriers to Companion Support During Childbirth, and (4) Creating an Enabling Environment for Birth Companionship. Most participants appreciated companionship, particularly from trusted family members such as mothers or spouses. Companionship was associated with emotional reassurance, better pain management, and a sense of safety. However, barriers included inadequate hospital infrastructure, unclear policies, misinformation, and a lack of awareness. **Conclusion:** While childbirth companionship is highly valued among postnatal women at MNH, multiple institutional and informational barriers limit its implementation. Interventions such as policy clarification, infrastructure improvements, early education during antenatal care, and training of potential companions could enhance its uptake and effectiveness. However, given that this study was conducted at a single tertiary facility with a small sample size, the findings may not be broadly

generalizable. Therefore, Caution should be exercised when applying these insights to other settings.

268. Mgala, B.T. (2025). Experiences with warfarin long-term use among patients with prosthetic heart valves attending clinic at Jakaya Kikwete cardiac institute, Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: One of the difficulties in care after heart valve replacement surgery is the use of warfarin in preventing valve-related thromboembolic complications. Due to its narrow therapeutic window, the safety and effectiveness of warfarin depend on maintaining a tightly controlled International Normalized Ratio (INR) through strict adherence to recommendations given by healthcare providers. Despite receiving education at discharge, patients with prosthetic heart valves show low adherence to warfarin therapy. **Aim of the study:** The study explored the experiences with warfarin long-term use among patients with prosthetic heart valves at Jakaya Kikwete Cardiac Institute (JKCI), Dar es Salaam, Tanzania. **Materials and methods:** An explorative qualitative study using a phenomenological design was conducted among patients with prosthetic valves on long-term warfarin therapy. A purposive sampling method was used to select twelve (12) participants. In-depth interviews were conducted using a semi-structured interview guide. A content analysis approach was used to analyze the data. **Results:** Four categories and the associated sub-categories emerged from this study. 1) Day-to-day living experiences with warfarin use, 2) challenges encountered with long-term use of warfarin, 3) supporting systems for long-term warfarin use, and 4) strategies and coping mechanisms related to long-term warfarin use. Patients experienced modification of their eating habits, discomfort, and undesired body changes. Financial burden and centralized service were the main challenges encountered. Immediate family support was reported as the main support. Lastly, perceived benefits, accepting condition, and documenting dosage intake were the coping strategies used by participants in optimizing warfarin compliance in the long run. **Conclusion and recommendations:** The findings reveal experiences of lifestyle disruptions, limited clinical support, and high self-management burdens among these patients. Despite these, many remained committed through personal coping strategies and family support. Based on these findings, we recommend decentralization of warfarin services, structured follow-up, patient education, and provider training for better patient outcomes. **Key words:** Prosthetic heart valve patients, Warfarin, International Normalized Ratio.

269. Mgaya, A. N. (2025). Perceptions and experiences of clinicians in the management of neonates' care conducted at Temeke municipality council, Dar es salaam, Tanzania. Muhimbili university of Health and Allied Sciences.

Abstract

Introduction: Neonatal mortality remains a major public health concern, in low- and middle-income countries like Tanzania. In Tanzania, and more especially in Temeke Municipality, have increased despite a number of efforts, according to Temeke Municipal Council. For instance, Temeke's neonatal mortality rate rose from 345 in 2021 to 858 in 2023. Modern equipment and

expanded care units have not resolved the issue. Understanding healthcare providers' experiences is crucial to identifying barriers and improving neonatal care. **Objective:** The broad objective of this study was to explore the perceptions and experiences of healthcare providers in the management and care of neonates at Temeke Regional Referral Hospital (TRRH), Dar es Salaam, Tanzania. **Methods:** A Phenomenological study design was employed. The study population included healthcare providers, specifically doctors and nurses, who have worked for at least six months in the neonatal unit at TRRH. Purposive sampling was used to select 20 participants. Data was collected through in-depth interviews guide. Inductive thematic analysis was applied, with coding conducted using NVIVO software version 12. Themes were developed to reflect participants' perceptions, experiences, impacting neonatal care management. **Findings:** The study identified four key challenges in managing neonatal care at Temeke Regional Referral Hospital: mothers' limited knowledge and delayed facility attendance, inadequate resources amid high admissions, a weak referral system causing congestion and delays, and insufficient training and teamwork among healthcare providers. These findings highlight the need for enhanced maternal education, improved referral coordination, better resource allocation, and strengthened staff training and collaboration. **Conclusion:** Neonatal care at Temeke Regional Referral Hospital is impeded by gaps in maternal health knowledge, hospital overcrowding, inadequate equipment, weak referral systems, and limited provider training. Addressing these challenges requires strengthening maternal health education at both community and facility levels, expanding neonatal infrastructure and staffing, and improving referral coordination to ensure timely care. In addition, continuous professional development and targeted training for healthcare workers, especially those in lower-level facilities, are essential to enhance neonatal care quality and reduce preventable newborn deaths.

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270. Mhally, G. (2025). Perception, experience, and clinical decisions of healthcare providers on viability and management of extremely premature neonates in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: In recent decades, there has been a global shift in the limit of viability toward lower gestational ages. In Tanzania, the fetal viability threshold remains at 28 weeks of gestation. With increasing survival of extremely premature neonates (EPNs), healthcare providers (HCPs) are often faced with complex decisions around initiating, withholding, or withdrawing intensive care at the margins of viability. In the absence of clear national frameworks to guide these decisions, clinical judgment is likely influenced by individual perceptions, professional experience, and the availability of resources. Limited literature exists on how HCPs in low- and middle-income countries (LMICs) conceptualize viability or approach care for EPNs. **Objective:** To explore the perceptions, experiences, and clinical decision-making processes of healthcare providers regarding the viability and management of EPNs in Dar es Salaam, Tanzania. **Methodology:** The study was conducted in one regional referral hospital (Temeke) and one tertiary hospital (Muhimbili National Hospital, Upanga). A qualitative case study design was employed to gain an in-depth, context-rich understanding of provider experiences. Twenty-four in-depth interviews were conducted with healthcare workers from labor and neonatal wards directly involved in the

management of EPNs. Data were transcribed verbatim and analyzed using content analysis in a multistep, iterative process to identify recurring themes and patterns. **Results:** The study revealed that healthcare providers interpret viability through a combination of formal guidelines, clinical experience, and observed outcomes. Decision-making around initiating or withholding care was strongly influenced by gestational age, birth weight, resource constraints, and perceived chances of survival. Providers described emotional distress, ethical uncertainty, and the strain of high workloads, but also showed resilience through peer support, self-reflection, and motivation derived from successful cases. Four key thematic categories emerged: interpretation of viability guidelines, contextual and experiential influences, ethical and clinical decision-making, and coping mechanisms in emotionally demanding settings. **Conclusion:** The care of extremely premature neonates in Tanzania is shaped by a complex interplay of clinical judgment, systemic limitations, and emotional burden. While many providers remain committed to delivering care, they operate in settings where moral distress, ambiguity, and resource gaps are common. To support more consistent, compassionate, and evidence-based care, providers need clearer guidance, improved training, and structured emotional support. **Recommendations:** National neonatal care guidelines should be reviewed to reflect evolving evidence on viability thresholds, including care for infants born as early as 26–27 weeks. Simple, practical decision-making tools should be developed to support providers working at the frontline. Greater emphasis should be placed on routine collection and use of local survival data, capacity-building through training, and inclusion of ethical decision-making in preservice curricula. Emotional support mechanisms such as regular debriefings and peer-support networks are essential, and future research should examine provider experiences across different healthcare settings to guide more tailored interventions.

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271. Michael, P. F. (2025). The economic costs of occupational diseases and injuries in the manufacturing industry in Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Occupational diseases and injuries are health conditions or physical harm resulting from work-related activities with a significant impact on workers' health and productivity. Tanzania's manufacturing industry exposes workers to various hazards, resulting in occupational diseases and injuries that impose substantial economic costs (direct and indirect) on workers, employers, and the nation. However, the lack of reliable, sector-specific data in low- and middle-income countries, including Tanzania, hinders the development of evidence-based policies to improve occupational health and safety management and mitigate economic losses. **Objective:** To estimate the economic costs of occupational diseases and injuries in the manufacturing industry in Tanzania. Methodology: A retrospective cross-sectional design was conducted using secondary data from the Workers Compensation Fund (WCF) covering the period 2018 to 2023. Direct costs were estimated using a bottom-up approach and indirect costs were estimated using the friction cost method. Data were analysed using Microsoft Excel to generate cost summaries, trends, and

unit cost estimates across the five-year period. **Results:** The total cost of occupational injuries over the five-year period was approximately USD 11.4 million, with direct costs contributing to about USD 9.5 million and indirect costs approximately USD 1.9 million. For occupational diseases, the total cost was about USD 1.2 million, comprising USD 869,313 in direct costs and USD 317,057 in indirect costs. The highest costs were recorded in 2019/2020, with a general downward trend in subsequent years. The average unit cost per case was higher for diseases (up to USD 8,164 in 2018/2019) than for injuries (about USD 4,700 in 2018/2019), reflecting the greater complexity and duration of disease-related cases. **Conclusion and recommendations:** Based on the study findings, occupational diseases and injuries impose a considerable economic burden on Tanzania's manufacturing industry, with occupational injuries contributing the highest share of total costs. The findings highlight the importance of strengthening occupational health policies, improving disease reporting systems, and investing in preventive interventions.

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272. Michael, S.M. (2025). Factors Influencing Complementary Feeding Practices Among Children Aged 6-23 Months in Rural Farming Communities in Geita Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Inappropriate complementary feeding contributes significantly to child undernutrition, even in food-secure regions. In Tanzania, high food producing areas like Geita region consistently report higher magnitudes of inappropriate complementary feeding and subsequent undernutrition, highlighting the role of caregiving practices, behaviors, and socio-cultural influences beyond food availability. However, little is known about how these context-specific factors shape feeding behaviors in rural farming communities. This study explored the factors influencing complementary feeding practices among children aged 6-23 months in rural farming communities in Geita. **Methods:** A phenomenology study design was employed, using purposive sampling to recruit mothers engaged in farming with children aged 6–23 months. Data were collected through two focus group discussions and seven in-depth interviews until saturation. Interviews were conducted in Kiswahili, recorded, transcribed, and analyzed thematically using Interpretative Phenomenological Analysis with help of ATLAS. **Results:** Complementary feeding was shaped by multilevel factors. At the individual level, mothers faced time constraints, fatigue from farm work, limited feeding frequency, poor dietary diversity, and knowledge gaps. Interpersonal factors included caregiving responsibilities shared with siblings, minimal paternal involvement, and family-driven decision-making. Community influences included difficult living conditions, fear of criticism for late farm arrival, food taboos, social advice, and reliance on leftovers. Organizational influences were access to routine nutrition education, and poor harvests limiting food availability. **Conclusion:** Complementary feeding practices in rural farming communities are shaped by a complex interaction of individual, interpersonal, community, and organizational factors, with farming as a central influence. Efforts to improve child nutrition should address contextual realities by promoting paternal involvement, tackling social norms,

reducing mothers' dual burden of farming and caregiving, and ensuring consistent, context-specific health education.

273. Minja, L. (2025). The Risk for Obstructive Sleep Apnea and Associated Factors Among Asthma Patients Attending Pulmonology Clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Obstructive Sleep Apnea (OSA) is a common comorbidity among asthma patients and may contribute to poor asthma control and increased morbidity. However, the burden and associated factors of OSA risk among asthma patients remain underexplored in Tanzania. Objectives: This study aimed to determine the proportion of asthma patients at high risk for OSA, identify factors associated with OSA risk, and assess the level of asthma control among asthma patients attending the Pulmonology Clinic at Muhimbili National Hospital. **Methods:** A cross-sectional study was conducted from August 2024 to January 2025 among 185 asthma patients. Data were collected using a structured questionnaire incorporating the STOP BANG tool to assess OSA risk and the Asthma Control Test (ACT) to evaluate asthma symptom control. Modified Poisson regression was used to identify factors associated with a high risk of OSA. Statistical significance was set at $p < 0.05$. **Results:** Among the participants, 35.1% were found to be at high risk for OSA. Poor asthma control was significantly associated with higher OSA risk ($p < 0.001$). Comorbidities, particularly diabetes mellitus, gastroesophageal reflux disease (GERD), and malignancy, were also independently associated with an increased risk of OSA. In contrast, asthma duration and smoking status showed no significant association. Notably, the number of patients with malignancy was very small, requiring cautious interpretation of this finding. **Conclusion:** The study highlights a high proportion of asthma patients at risk for OSA, with poor asthma control and certain comorbidities significantly contributing to the risk. Routine screening for OSA among asthma patients, especially those with uncontrolled asthma or chronic comorbidities, is recommended to improve disease management and patient outcomes. **Keywords:** Asthma, Obstructive Sleep Apnea, STOP-BANG, Asthma Control, Comorbidities, Muhimbili National Hospital.

274. Mirambo,A.K.(2025). Prevalence of menstrual disorders and their impact on the quality of life among undergraduate students in Dar es salaam, Tanzania Muhimbili University of Health and Allied Sciences.

Abstract

Background: Menstrual disorders impact 75% of women of reproductive age and are a primary reason for medical consultations. These disorders include dysmenorrhea, irregular cycles, heavy menstrual bleeding and amenorrhea and can have impact on the quality of life of university students by disrupting academic performance, daily activities and psychological well-being. Although menstrual disorders are wide spread, there is limited comprehensive data on how they

relate to quality of life in Tanzania. **Aim of the study:** To determine the prevalence of menstrual disorders and their impact on quality of life among undergraduate students in Dar es Salaam, Tanzania **Methodology:** An analytical cross-sectional study surveyed 407 female undergraduate students at the University of Dar es Salaam using a pretested self-administered questionnaire on Kobo Toolbox. The study collected data on sociodemographic characteristics, menstrual disorder patterns and quality of life (measured via WHOQOL-BREF). Participants were recruited through multistage random sampling. Data were analyzed using SPSS version 27 with descriptive statistics summarizing participant characteristics and menstrual disorder prevalence and quantile regression assessing the association between menstrual disorders and quality of life.**Results:** Out of 407 participants, 389 (95.6%) had at least one menstrual disorder. The most common disorder was premenstrual syndrome (78.4%), followed by menstrual pain (73.0%). On the other hand, 47.4% of students have a poor quality of life. Private sponsorship (Adjusted risk ratio (aRR) =1.467, 95% confidence interval (CI) (1.149 – 1.872), p=0.002) and amenorrhea (aRR=0.812, 95% CI (0.676 – 0.975), p=0.026) were the significant factors associated with quality of life. C**onclusion and Recommendations:** The study highlights a high prevalence of menstrual disorders among female undergraduate students with amenorrhea significantly reducing their quality of life. The findings of this study underscore the need for holistic, gender-sensitive health interventions emphasizing that menstrual health is critical for public and reproductive health equity. The study recommends establishing menstrual health education and awareness programs. On the other hand, further research is recommended to explore qualitatively the lived experiences of those with menstrual disorders and their impact on QoL.

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275. Mjema, S. M. (2025). Surgical Anatomy of Corona Mortis: A Cadaveric Study at Muhimbili University of Health and Allied Sciences. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Corona mortis (CMOR) is the vascular anastomosis between the obturator and external iliac vessels or inferior epigastric vessels. Being a retropubic vessel, the corona mortis is frequently injured in anterior pelvic trauma, such as the superior pubic ramus and acetabular fractures, causing significant bleeding. Iatrogenic injuries may be encountered during anterior approach to the pelvic ring and acetabulum such as ilioinguinal, iliofemoral, and modified stopper. Although these approaches have high success rate, injury rate of corona mortis is approximately 8%. Therefore, it is important to identify this vessel and ligate it when performing such approaches. Knowledge about corona mortis and its anatomical relation in a given population is necessary to help orthopaedical surgeons avoid iatrogenic injuries. Objective: To determine prevalence and provide anatomical variants of this anastomosis at human cadaveric laboratory of Muhimbili university of health and allied sciences (MUHAS), in Tanzania. Materials and **Methods:** This was a cross-sectional study, conducted at the MUHAS human anatomy laboratory, involving 60 hemipelves obtained from 30 cadavers. The dissection of each hemipelvis was done based on the ilioinguinal approach as described by Letournel (1993). Presence of corona mortis noted, distance of corona mortis from pubis symphysis and its diameter were measured using an elastic ruler and Vernier calliper, respectively. Vascular type was determined by observation. Data were recorded in

Microsoft Excel 2019 and imported and analysed using SPSS version 25. One sample t-test, with a significance level of 5%, was used to compare average distance and diameter between the left and right hemipelvis. Results: Among 60 dissected hemipelves, 32(53.3%) had corona mortis. Venous vasculature was the commonest making about 18(56.2%) of all CMOR with average distance of 4.89cm from Pubis symphysis. Average diameters of arterial and venous vasculature were 2.75mm and 3.52mm respectively. **Conclusion:** This study found that CMOR is a common anatomical variant, present in more than half of dissected hemipelves, it has a predominance of venous over other vasculature types. Observed shorter distance between the CMOR and the pubic symphysis, variability and complexity of venous CMOR; emphasizes the need for increased vigilance among orthopaedic surgeons when performing anterior approaches to the pelvis and acetabulum to minimize the risk of intraoperative bleeding and improve surgical outcomes.

276. Mkama, J.J. (2025). Corneal Astigmatic Changes After Pterygium Excision Among Patients Attending Selected Tertiary Eye Units in Dar Es Salaam. Muhimbili University of Health and Allied Science.

Abstract

Background: Pterygium is a fibrovascular ocular surface lesion that grows from the bulbar conjunctiva and extends onto the cornea. Globally, the prevalence of pterygium ranges from 0.07% to 53%. Pterygium can cause a significant amount of corneal astigmatism, leading to visual impairment. Excision of pterygium may lead to changes in corneal astigmatism and visual acuity; however, the extent of these changes after surgery remains unknown in our setting. This lack of information hinders our ability to evaluate the effectiveness of the surgery and predict the refractive stability after the procedure **Objective:** To assess the magnitude of corneal astigmatic and visual acuity changes after pterygium excision and to determine the factors associated with these changes, among patients attending selected tertiary eye units in Dar es Salaam. **Materials and Methods:** A prospective cohort study was conducted for a period of 6 months involving 117 participants who were consecutively selected. Keratometry readings and best corrected visual acuity were taken before and after surgery. Statistical Package for Social Science version 26 was used to analyse data. Wilcoxon and McNamar's tests were used to assess corneal astigmatism and visual acuity changes respectively. A P-value < 0.05 was considered statistically significant. **Results:** A total of 133 eyes of 117 participants (16 bilateral cases) were analyzed. The median age was 48 years (IQR: 37, 56). Females were slightly more 69 (59%) compared to males. More than one-third 54 (40.6%) had grade 2 pterygium. All eyes had corneal astigmatism preoperatively, and about a quarter 34 (25.5%) had mild to moderate visual impairment. Pterygium excision with conjunctival autograft was the most commonly performed technique, 111 (83.5%). There was a significant reduction in the magnitude of corneal astigmatism from 1.25 D (0.75, 1.99 D) preoperative to 0.68 D (0.38,1.02 D) one-month post-operative (P-value < 0.001). Most eyes 19 (95%) with mild visual impairment preoperative improved to normal vision one month postoperatively. **Conclusion:** Pterygia excision leads to a significant reduction in the magnitude of corneal astigmatism and improvement in visual acuity.

277. Mkinga, B. (2025). Evaluation of phytochemical profile, antimicrobial and antioxidant activities of *phoenix reclinata* JACQ. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Phoenix reclinata is a common plant that is used traditionally to treat various ailments including infectious ones such as chronic diarrhoea and HIV/AIDS-associated opportunistic infections. The antimicrobial and phytochemical profile of Phoenix species such as P. dactylifera and P. sylvestris is well documented in other studies, however, little is known regarding P. reclinata antimicrobial activity. Given its medicinal potential, it is important to evaluate its antioxidant and phytochemical properties, which also remain largely understudied. **Objectives:** This study aimed to determine antioxidant, antibacterial and antifungal activities, and to establish the phytochemical profiles of P. reclinata leaf and root extracts. **Materials and methods:** Fresh leaves and roots of P. reclinata were collected from Ludewa district in the Njombe region, Southwestern Tanzania. After complete drying, the materials were ground and extracted by cold maceration in acetone for 3 days, with intermittent shaking. The resulting solution was dried in vacuo at 40 ℃ to obtain dried crude extracts. The antioxidant activity of the leaf and root extracts was determined using the DPPH-based free radical scavenging assay. Antibacterial activity was evaluated against Staphylococcus aureus (ATCC 25923), Escherichia coli (ATCC 25922) and Klebsiella pneumoniae (ATCC 708903), while antifungal activity was assessed against Candida albicans (ATCC 90028) and Cryptococcus neoformans (ATCC 90112). Both assays were performed using the disc diffusion method. Bioactive compounds were investigated through contact Thin-Layer Chromatography (TLC) bioautography to localize antibacterial or antifungal constituents on a TLC plate. Both leaf and root extracts were subjected to phytochemical screening using standard procedures. Additionally, guided by the results from TLC contact bioautography, chromatographic separation of the active extract, was performed using column chromatography. Further purification of the fractions was achieved through Preparative Thin Layer chromatography (TLC) to isolate pure compounds. **Results:** The DPPH free-radical scavenging assay demonstrated that the root extract of P. reclinata had a lower half-maximal inhibitory concentration (IC50) of 200 µg/mL compared to the leaf extract, which had an IC50 of 500 µg/mL. This indicates that the root extract possesses stronger antioxidant activity, reflecting a greater efficacy in neutralizing free radicals. In antimicrobial testing, the root extract exhibited a superior antibacterial activity against S. aureus, with a Zone of Inhibition (ZoI) measuring 16 mm, whereas the leaf extract produced a smaller ZoI of 11 mm against the same organism, suggesting comparatively lower antibacterial potency. On the other hand, neither the root nor leaf extracts exhibited any detectable antifungal activity against the tested fungal strains, C. albicans and C. neoformans, under the conditions used. These findings suggest that the roots of P. reclinata harbours more potent antioxidant and antibacterial compounds, while both parts lacking antifungal properties in their crude forms. Phytochemical screening of both extracts confirmed the presence of key secondary metabolites, including terpenoids, flavonoids and tannins. Due to its higher antibacterial activity, the root extract was further analysed using TLC bioautography, which revealed one bioactive spot, representing a compound, producing a ZoI of 6 mm. To isolate it, the extract was subjected to a series of chromatographic techniques, resulting in the purification of the active spot, Compound 6 (12.3 mg), along with 9 additional compounds including Compound 1 (15.7 mg), Compound 2 (2.4

mg), Compound 3 (21 mg), Compound 4 (39.4 mg, Compound 5 (2.7 mg), Compound 7 (4.5 mg), Compound 8 (3.3 mg), Compound 9 (2.5 mg) and Compound 10 (5.2 mg). Structural elucidation and molecular characterization of these compounds are currently underway. **Conclusion and recommendation:** Even though both root and leaf extracts had the same phytochemical profile, the roots possess higher antioxidant and antibacterial activity against S. aureus. The observed differences in activity between the root and leaf extracts may be attributed to variation in the concentration of bioactive constituents present in each plant part. Further studies to elucidate the mechanisms of antibacterial action of the isolated compounds are recommended. Further research on standardized herbal products from leaf or root of the plant is recommended.

278. Mkongi, T.H. (2025). Patients' Level of Satisfaction with the Quality of Healthcare Services in Tanzania. A Case of Mwananyamala Regional Referral Hospital in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Patient satisfaction plays a crucial role in influencing better treatment outcomes. Improvement in healthcare delivery in Tanzania has led the MRRH being promoted to a regional referral hospital complemented by improvement in its infrastructure, equipment and staffing level. It is important to assess the current level of patient satisfaction regarding the quality of healthcare services following these improvements. **Objective:** This study aimed to assess the patient's level of satisfaction with the quality of healthcare services among patient's receiving services at MRRH in Dar es Salaam, Tanzania. **Methodology:** This descriptive cross-sectional study was conducted at the MRRH from October to November 2024. A total of 381 patients were systematically sampled to assess their level of satisfaction using a standardized SERVQUAL questionnaire consisting of expectations and perception questions. Data were analysed descriptively using Stata version 16, and factors affecting satisfaction were analysed using logistic regression. **Results:** The total mean score of expectation on the level of quality of services provided at MRRH was 16.75, while the total mean score of perception on the level of quality of services provided was 17.34. The mean satisfaction gap was -0.59, indicating dissatisfaction across all five domains. Responsiveness to the promptness and willingness of healthcare workers to assist patients and provide timely services had the smallest gap (-0.08), followed by empathy (-0.09), tangibles (-0.12), assurance (-0.13) and lastly reliability (-0.17). Patients who were attending emergency and surgical services had a lower satisfaction by a -3.14 and -3.20 satisfaction gap compared to the ones attending clinic at the internal medicine department (p=0.02 and p=0.03, respectively). Participants who have secondary education had significantly a 3.26 satisfaction gap, more than participants with no formal education**.**

279. Mkotya, P. (2025). Evaluation of Epidermal Growth Factor Receptor expression by immunohistochemistry in Nasopharyngeal carcinoma patients at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Nasopharyngeal carcinoma (NPC) ranks 23rd worldwide among head and neck cancers. In Tanzania, it accounts for 14.2% of head and neck cancer cases at Muhimbili National Hospital (MNH), making it the third most common. Current management is radiotherapy with cisplatin-based chemotherapy, but outcomes remain poor as most patients present with advanced disease due to late diagnosis driven by non-specific symptoms, limited diagnostic infrastructure, and the absence of routine biomarker testing. Access to targeted therapies is restricted, and prognostic tools are underutilized in guiding treatment decisions. The epidermal growth factor receptor (EGFR) plays a pivotal role in prognostication and treatment stratification as a potential responsiveness to EGFR-targeted therapies. Despite this, EGFR expression in NPC has not been systematically evaluated in Tanzania or the wider East African region. This study seeks to determine EGFR expression patterns in NPC patients at MNH using immunohistochemistry, addressing a critical local evidence gap and informing future biomarker-driven treatment strategies **Objective:** To determine the prevalence and staining characteristics of EGFR expression in NPC patients at Muhimbili National Hospital (MNH) and assess its association with demographic and histological features. **Methods:** A retrospective cross-sectional study was conducted on histologically confirmed NPC cases diagnosed at MNH between January 2023 and December 2024. Histological subtypes and clinical features were reviewed, and EGFR expression was assessed using immunohistochemistry. The staining was evaluated based on both intensity and the proportion of tumor cells stained. Associations between EGFR expression and factors such as age, sex, and histological subtype were analyzed using Fisher's exact test. **Results:** A total of 82 patients were recruited, of whom 54 (65.9%) were male. The median age was 47 years (IQR: 28–59). Nasal obstruction was the most common presenting symptom, reported in 54 patients (65.9%). The predominant histological subtype was differentiated nonkeratinizing squamous cell carcinoma, present in 40 cases (48.8%). EGFR overexpression was vi observed in 74 cases (90.2%), with membranous localization in all positive tumors. High-extent staining (>50% of tumor cells) was present in 55 (67.0%) EGFR-positive cases, and strong staining intensity in 57 (69.5%). EGFR overexpression was more frequent in males (63.5%), in patients aged 40–59 years (41.9%), and in tumors of the differentiated non-keratinizing squamous cell carcinoma subtype (48.6%). However, these associations were not statistically significant ($p > 0.05$ for all comparisons). **Conclusion:** EGFR overexpression is highly prevalent in Tanzanian nasopharyngeal carcinoma patients, supporting its role as a key biomarker for prognosis and targeted therapy. Future studies focusing on genetic profiling, long-term outcomes, and collaborative research efforts are essential to fully realize the benefits of EGFR-targeted therapies. Strengthening diagnostic capacity and integrating molecular testing into standard care will be vital for improving NPC management in Tanzania. **Keywords:** Nasopharyngeal carcinoma, EGFR, Immunohistochemistry, Targeted therapy, Tanzania

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280. Mkungura, S. H. (2025). Prevalence and Associated Factors of Rheumatic Heart Disease Among Secondary School Students Aged 14-20 Years in Karatu District. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Rheumatic heart disease (RHD) is a preventable cause of acquired valvular heart disease. It follows an infection of the upper airways by Group A-Beta haemolytic Streptococcus bacteria. The disease is endemic in sub-Saharan Africa (SSA), with most of the documented literature from primary school children younger than 16 years of age. Little is known about the burden of RHD among older children and adolescents in secondary schools, who may have a higher prevalence of RHD. **Aim:** To determine the prevalence and factors associated with RHD among secondary school students in Karatu District. **Methodology:** A cross-sectional study was conducted among secondary school students in Karatu from August to October 2024. Multistage sampling was used to select participants, and in total, 9 schools, 4 from semiurban areas and 5 from rural areas, participated in the study. A structured questionnaire was used to record the sociodemographic and clinical characteristics of the participants. All participants underwent an initial echocardiogram screening for RHD via a handheld echo device (V-scan GE), and those who had a positive screening test (participants who had mitral regurgitation of jet length of 2 cm in two consecutive frames or any aortic regurgitation, or restricted mitral valve leaflet motion and reduced opening of the mitral valve) underwent a detailed echocardiogram examination via the Accuson P500 echo machine. RHD was confirmed based on World Heart Federation 2023 criteria {participants with established RHD (moderate to severe MR or AR, any mitral or aortic stenosis) or pathological MR or AR with or without morphological aortic or mitral valve changes}. Categorical variables were compared by using chi-square or Fisher's exact test, where appropriate. The associations between RHD and its independent factors were assessed using a logistic regression model, whereas all factors known to associate with RHD in previous studies and those with a p value of < 0.05 was considered statistically significant in the multivariable model. **Results:** Of the 4080 invited participants, 1761 (43.14%) were screened (males = 56.8%), with a mean (SD) age of 16.7 (2.0) years. In total, 121 (6.87%) participants had a positive screening test and were qualified for a second confirmatory test. Confirmatory echocardiography was subsequently done in 91 (75.2%) participants. Among the 91 participants, RHD was confirmed in 34 (23 males and 11 females), resulting in an overall prevalence of RHD of 1.93% (34/1761) in this population. RHD was higher in males (2.39%) than in females (1.31%) and in older (17 20 years) students than in younger (14-16 years) students (2.38% vs 1.47%), although these differences were not statistically significant (p=0.12, p=0.09, respectively). In the multivariable analysis, RHD was independently associated with the use of solid fuel (aOR 2.73, 95% CI 1.04 7.16, p=0.042), a history of recurrent upper respiratory tract infection (aOR 2.64, 95% CI 1.01 6.89, p=0.039) and being underweight (aOR 2.15, 95% CI 1.03–4.48, p=0.041). **Conclusion:** The prevalence of RHD among secondary school students in Karatu is 1.93%, which is similar to previous findings from the region. RHD was independently associated with the use of solid fuel, being underweight and having a history of recurrent upper respiratory tract infection. **Recommendation:** These findings suggest that RHD is prevalent in secondary schools; hence, more screening for RHD in secondary school students to determine the burden of disease should be encouraged. Promotion of policies that address undernutrition, upper respiratory tract infection (URTI) and use of clean fuel are needed.

281. Mlambi, S.J. (2025). Burden, Outcomes, and Factors Associated with Critical Illnesses Among Children Attending Emergency Department of Regional Referral Hospitals in Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pediatric critical illness is a major challenge in low- and middle-income countries (LMICs), where limited resources constrain timely care and outcomes. In Tanzania, little is known about the burden and outcomes of critically ill children at the regional referral hospital level. This study aimed to assess the burden, outcomes, and factors associated with critical illness among children attending emergency departments (EDs) of regional referral hospitals in Dar es Salaam. **Methodology:** A cross-sectional observational study was conducted over two months (April–May 2025) across three hospitals: Amana, Temeke, and Mwananyamala. Children aged 29 days to 15 years presenting to the emergency departments were enrolled. Data on demographics, clinical features, nutritional status, insurance coverage, and outcomes were collected. Descriptive statistics, bivariate analysis, and multivariate logistic regression were used to determine associations with critical illness. **Results:** Of the 486 children enrolled, 314 (69%) were triaged as critically ill. The highest burden was observed at Temeke Hospital 117(77%). Key predictors of critical illness included lack of insurance (aOR = 3.02, P < 0.004), undernutrition (aOR = 0.17, P < 0.001), and primary-level parental education (aOR = 0.43, P < 0.038). Delayed presentation (more than five days of illness) and previous hospitalization were also significantly associated with critical illness. Critically ill children were more likely to be admitted, referred to higher centers, or die in the emergency department (P < 0.001). ED mortality was 4.6%, with 81% of deaths among critically ill patients. **Conclusion:** This study highlights a high burden of critical illness among children in Dar es Salaam regional referral hospitals, driven by socioeconomic and systemic barriers such as malnutrition, lack of insurance, delayed care-seeking, and gaps in triage systems, which contribute to poor outcomes. Improving early recognition and addressing socioeconomic disparities are essential to reduce pediatric morbidity and mortality in Tanzania. These findings are hypothesis-generating and provide a foundation for future multicenter and longitudinal studies rather than immediate policy implementation.

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282. Mlay, E. A. (2025). Prevalence and predictors of prolonged post-operative hospital stay following primary total hip arthroplasty at Muhimbili Orthopaedic Institute, Muhimbili University of Health and Allied Sciences.

Abstract

Background: The length of stay is an indicator of the efficiency of hospital management, in which a reduction in the number of inpatient days results in decreased risk of infection and medication side effects, and improvement in the quality of treatment. Although various modifiable factors can influence the duration of stay, such as patients undergoing complex primary THA often experience longer hospitalization due to extensive surgical procedures, increased blood loss, and delayed postoperative recovery. Furthermore, the presence of pre-existing comorbidities such as DM, HTN, CKD, or cardiac disease may lead to postoperative complications that may lead to prolonged postoperative hospital stay following primary THA. **Aim of the study:** To determine the factors leading to prolonged Post-operative hospital stay following primary Total Hip Arthroplasty at Muhimbili Orthopaedic Institute from 1st July to 31st December 2023. **Methods:** A 6-month hospital-based prospective cross-sectional study, enrolling consecutively 87 adult patients who underwent primary Total Hip Arthroplasty, was conducted at Muhimbili Orthopedics Institute from

July to December 2023. Primary outcome data such as prolonged post-operative hospital stay, patient-related data (Age, Sex, Diagnosis, Smoking, ASA,) and treatment-related data (Positioning of patient, surgical approach, Duration of surgery, Type of anaesthesia, and physiotherapy) were collected using a structured questionnaire. Stata version 15.1 and Microsoft Excel 2013 were used for data analysis. **Results:** A total of 87 patients were enrolled and had a median age of 63 years. Out of 87 patients enrolled in this study, 33 (37.9%) had a prolonged post-operative hospital stay following primary THA. The median post-operative hospital stay following THA was 5 days, with a 25th percentile of 4 days and a 75th percentile of 7 days. A multivariable Robust Poisson regression analysis revealed duration of surgery and type of anaesthesia as independent factors associated with prolonged post-operative hospital stay among patients treated with THA at MOI ($p<0.05$). Conclusion: The findings of this study suggest that minimizing surgery time and preferring spinal anaesthesia could help reduce post-operative hospital stay after primary THA. **Keywords:** Post-operative hospital Stay, Total Hip Arthroplasty, and Associated factors

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283. Mlelwa, C. N. (2025). Assessing awareness of preconception care and associated factors among pregnant women in Masasi Town Council. Muhimbili university of health and Allied Sciences.

Abstract

Background: Preconception care is an intervention aimed at identifying and modifying biomedical, behavioural, and social risks to pregnancy through prevention and management, emphasizing factors that must be acted upon before conception or in early pregnancy to have maximal impact on the reduction of obstetric complications. It plays a critical role in promoting maternal and neonatal health by addressing potential health risks before conception occurs. Despite its significance in reducing adverse pregnancy outcomes, awareness of PCC services remain limited, particularly in low-resource settings. Understanding the level of awareness among women of reproductive age—and the factors influencing it—is essential for designing effective interventions and informing public health policies that support safe motherhood and healthy pregnancies. **Objectives:** To assess the awareness of preconception care and its associated factors among pregnant women. **Materials and Methods:** A cross-sectional, quantitative, analytical study was conducted at Masasi Town Council in the Mtwara Region from April 18 to May 16, 2025. A total of 382 pregnant women were recruited using a systematic sampling technique through antenatal care (ANC) clinics and using semi-structured questionnaires. The questionnaire was pretested prior to the commencement of the study. Data were analysed using SPSS version 27. Results: A total of 382 participants were included, with a median age of 29 years (IQR: 22–36). Only 106 (27.7%) were aware of preconception care. History of miscarriage was significantly associated with awareness (aPR = 2.14; 95% CI: 1.23–3.26; p = 0.005). The most reported barriers on awareness of preconception care were lack of education (143; 37.4%), unavailability of services (112; 29.3%), and other reasons (127; 33.3%). **Conclusion:** The level of awareness of preconception care among pregnant women in Masasi Town Council is generally low, with a history of miscarriage emerging as the only significant predictor. Addressing barriers such as a lack of education and limited-service availability is essential to improve awareness and uptake.

284. Mlimba, A.E. (2025). Assessment of Nutritional Factors Associated with Early Weight Changes in Premature Infants: A Facility-Based Study in Njombe and Ruvuma Regions. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Poor weight gain remains a serious concern among premature infants, and is associated with increased risk of poor growth, delayed developmental milestones, high morbidity and mortality. The causes vary across different contexts but are primarily linked to nutritional and maternal factors. Evidence shows a persistent burden of prematurity and its associated complications, with limited studies on weight gain in this subpopulation. Njombe and Ruvuma regions were selected for this study due to their high rates of premature births. **Objective:** This study examined nutrition factors associated with early weight changes among premature infants in Njombe and Ruvuma regions, Tanzania. **Methods:** This longitudinal, facility-based observational study was conducted among premature infants and their mothers from May 1 to June 30, 2025, in four health facilities. Infants' weights were measured daily for seven days. Nutritional factors assessed included initial feeding method, feeding frequency, time of initiation of the first feed, breastfeeding model and milk type. Descriptive statistics were performed using the Mann-Whitney U-test, the Kruskal-Wallis test and a multivariable Generalized Linear Model identified predictors of early weight changes. **Results:** The study enrolled 134 premature infants with a mean birth weight of 1554.3 g (SD ± 350.4), of whom 51.5% were female. The overall average daily weight gain was 1.28 g/day, and the majority (85.1%) of infants experienced poor weight gain. Infants born to mothers with secondary education gained, on average, 10.21 g/day (95% CI: 3.87–16.54) more than those whose mothers had only primary or no formal education. Similarly, infants of HIV-negative mothers gained 13.76 g/day (95% CI: –2.06–25.45) more compared to those of HIV-positive mothers. In contrast, alternative feeding methods were associated with markedly lower weight gain: infants fed by cup and tube gained 13.44 g/day (95% CI: – 21.27 to –5.61) and 13.61 g/day (95% CI: –21.91 to –5.31) less, respectively, than those who were breastfed. Likewise, infants receiving mixed feeding (breast milk and formula) gained –9.76 g/day (95% CI: –19.44 to –0.08) less compared to those exclusively breastfed. **Conclusions:** Poor weight gain among premature babies remains a significant concern in Ruvuma and Njombe regions. Maternal education and HIV status, feeding method and type of milk play a significant role in weight outcomes. Strategies advocating for maternal nutrition, close pregnancy monitoring, and appropriate breastfeeding practices must be advocated to enhance optimal growth and better long-term cognitive and physical outcomes.

285. Mntenga, I.W. (2025). Evaluation of the Tanzanian 2018 antenatal care guideline implementation in health facilities at Ifakara Town: application of the re-aim framework. Muhimbili university of health and Allied Sciences.

Abstract

Background: The World Health Organization recommends the new Antenatal Care Model for quality of ANC Services. Since the previous ANC guideline has not led to the decline in perinatal deaths, which are mainly contributed by the increase in Stillbirths. The Majority of Stillbirths

occur in low- and middle-income countries including Tanzania. Although many countries have adopted the new ANC guideline, there is a paucity of data on the implementation process of this guideline at district/health center level. The Reach, Adoption and Implementation of the RE-AIM framework is used to evaluate implementation process of the Tanzanian 2018 ANC guideline. **Objective:** The study aimed to evaluate the implementation process of the Tanzanian 2018 ANC guidelines based on the Reach, Adoption and Implementation of the RE-AIM framework. **Methods:** A cross-sectional study was conducted to twenty-nine health facilities which were implementing Tanzania 2018 ANC guideline. Guided by RE-AIM framework, data was collected by using checklist from postnatal with ANC card, questionnaire from healthcare workers and assessment of interventions of the guideline through answered checklist and questionnaires was used for evaluating the extent of implementation of the guideline. Data was collected during November to December 2024. The set cutoff score points for surveyed postnatal with ANC cards and questionnaires was considered as the pregnant and healthcare workers to have been reached by the guideline, also the set cutoff score point for observed criteria for adoption determined adoption of the facility and finally the score percentage of interventions determined the extent of implementation of the guideline. Results: A total of 319 post-natal women with ANC cards and 71 HCW were recruited from 29 health facilities. A 126 postnatal with an ANC card and 66 HCW scored 70% and above. Only 9 facilities adopted, and implementation of the interventions is partially done with heterogeneous scores. **Conclusion:** More than three-quarters of HCW provide ANC services as per the Tanzania ANC 2018 guideline, less than a quarter of pregnant receiving ANC services as per the guideline. Less than a half of the facilities have adopted and implemented the guideline. **Recommendations:** Emphasize on educating importance of interventions by healthcare workers on interventions, sensitizing the community, training on the guidelines, and providing the guidelines

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286. Moh'd, K.S. (2025). Computed tomography patterns and associated factors of nasopharyngeal cancer among suspected patients attending Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Nasopharyngeal carcinoma (NPC) is a rare but aggressive malignancy of the head and neck that exhibits marked geographic variation. In Tanzania, delayed diagnosis and limited diagnostic facilities contribute to significant morbidity and mortality. Computed tomography (CT) remains a crucial tool for detecting and characterizing NPC in such settings. **Objective:** To determine CT imaging patterns and associated factors of nasopharyngeal carcinoma among clinically suspected patients attending Muhimbili National Hospital (MNH). **Methodology:** This hospital-based cross-sectional study was conducted in the Radiology Department of MNH and included 72 clinically suspected NPC patients. Clinical and lifestyle data were collected using structured questionnaires, and all patients underwent CT imaging. Radiological findings suggestive of NPC were documented, and and histologically confirmed was obtained where applicable. Data were analyzed descriptively and summarized using frequencies, percentages, means medians and IQR where applicable **Results:** Out of 72 clinically suspected patients, 23 (31.9%) were radiologically and histologically confirmed to have nasopharyngeal carcinoma. The

mean age of participants was 40.7 years, with a median of 42 years (range: 10–76 years) and a nearly equal male-to-female ratio of 0.95:1. Fossa of Rosenmüller was the most frequent site of tumor origin (69.6%), with lesions commonly showing poorly defined margins (73.9%) and heterogeneous enhancement (65.2%). The most common sites of local extension included the parapharyngeal space (52.2%), nasal cavity (34.8%), and pterygopalatine fossa (30.4%). Level II cervical lymph nodes were the most frequently involved nodal group (47.8%). Among lifestyle factors, 13% reported tobacco use, 26% alcohol intake, and 13% salted fish consumption, while none reported exposure to wood dust or a family history of NPC. **Conclusion:** Nasopharyngeal carcinoma in this study affected both sexes almost equally, with a relatively young mean age of 40.7 years. CT imaging demonstrated distinctive diagnostic patterns, particularly Fossa of Rosenmüller involvement, poorly defined margins, and nodal metastasis highlighting its reliability and value in resource-limited settings. Lifestyle factors such as alcohol consumption, tobacco use, and salted fish intake were more frequent among NPC patients, suggesting their potential contribution to disease development. Strengthening early radiologic evaluation and public awareness on modifiable lifestyle risks could enhance timely detection and management of NPC in Tanzania. **Recommendations:** Routine use of CT imaging should be emphasized in the evaluation of clinically suspected nasopharyngeal carcinoma to facilitate early detection, define tumor extent, and guide biopsy and treatment planning. Public awareness of early symptoms and modifiable lifestyle risks such as alcohol consumption and preserved food intake should be strengthened to improve timely diagnosis and management. **Keywords:** Nasopharyngeal carcinoma, Computed Tomography, Imaging patterns, Risk factors, Tanzania, Fossa of Rosenmüller, Histopathology.

287. Mohamed, H. (2025). Factors influencing adherence to lifestyle modifications among type 2 diabetes mellitus patients attending clinic at Amana regional referral hospital in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Type 2 Diabetes Mellitus (T2DM) is a major global health burden, affecting over 462 million people and increasingly contributing to morbidity and mortality, particularly in sub-Saharan Africa due to rapid urbanization and lifestyle transitions. In Tanzania, T2DM prevalence is rising, with many patients experiencing poor disease control due to low awareness and limited adherence to lifestyle modifications. Despite being a cornerstone of diabetes management, recommended changes such as dietary adjustment and increased physical activity are often hindered by individual, social, and institutional factors. This study explored these influences to inform more effective and context-sensitive interventions. **Aim/Broad Objective**: To explore and understand the factors influencing adherence to lifestyle modifications among patients with type 2 diabetes attending the diabetes clinic at Amana Regional Referral Hospital in Dar es Salaam, Tanzania. **Methods:** A qualitative phenomenological study design was employed to explore lived experiences of adult T2DM patients. Seventeen participants were selected through convenience sampling from Amana Regional Referral Hospital's diabetes clinic. Data were collected through in-depth, semi-structured interviews conducted in Kiswahili. Audio recordings were transcribed verbatim, translated into English, and analyzed thematically using a manual content analysis approach based on Braun and Clarke's six-step method. The Socio-Ecological Model guided the

organization of themes across individual, community, and institutional levels. **Findings:** Facilitators of lifestyle adherence included improved understanding of diabetes over time, self-motivation driven by perceived disease seriousness, emotional and practical family support, and respectful provider communication. Barriers included financial constraints limiting access to healthy foods, fatigue and competing work responsibilities, social stigma, and institutional gaps such as long clinic wait times and lack of follow-up support. While patients were generally motivated, these challenges significantly influenced their ability to sustain recommended lifestyle changes.

288. Mohamedi, M. (2025). Single mothers' access to healthcare services for their children in Kigamboni municipality, Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Access to healthcare services is a critical determinant of child health and survival, particularly for under-five children who are highly vulnerable to preventable illnesses. However, single mothers often face unique challenges that hinder their ability to seek timely and adequate healthcare for their children. **Objective:** This study explored the lived experiences and enablers supporting single mothers in accessing healthcare services for their under-five children in Kigamboni Municipality, Dar es Salaam. **Methods**: A qualitative phenomenological design was employed to gain an in-depth understanding of single mothers' experiences. Eighteen (18) single mothers with at least one child under five years of age were purposively selected from Vijibweni Ward, Kigamboni. Data were collected through in-depth interviews (IDIs) guided by a semi-structured interview schedule. Interviews were conducted in Kiswahili, transcribed verbatim, translated into English, and thematically analyzed using Braun and Clarke's six-step framework. **Results**: The findings revealed two major themes: lived experiences of single mothers in accessing healthcare services and enablers supporting access. Lived experiences included financial barriers, long distances to health facilities, long waiting times, stigma and discrimination by healthcare providers, and the challenge of balancing multiple caregiving and livelihood responsibilities. On the other hand, enablers supporting access included social and family support, government and NGO programs offering free child health services, positive attitudes and respectful care from health workers, and proximity of local dispensaries. **Conclusion**: The study concludes that despite existing free healthcare policies for under-five children, single mothers in Kigamboni still face significant socio-economic and systemic challenges that limit equitable access to healthcare. Strengthening social protection mechanisms, expanding community-based health initiatives, improving service delivery, and promoting respectful maternity and child care are crucial for improving health outcomes among children of single mothers.

289. Mohammed, I.S. (2025). Practice, barriers, and facilitators of early indwelling urinary catheter removal among women who underwent Muhimbili University of Health and

Allied Sciences caesarean section in selected hospitals in Zanzibar: a mixed-method approach. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Indwelling urinary catheterization is a common practice before caesarean section, primarily used to monitor urine and fluid output; extended catheter use beyond 12-24 hours offers no additional clinical benefits and has been linked with negative outcomes. Despite global recommendations, delayed removal remains a common practice, especially in Sub-Saharan Africa. **Aim:** This study aimed to investigate the current practices, facilitators, and barriers associated with delayed indwelling urinary catheter removal among post-caesarean section women in selected hospitals in Zanzibar. **Materials & Methods:** A convergent mixed design was employed. For the quantitative phase, consecutive sampling was applied to 225 women who underwent Caesarean section between March and May 2025 in three district hospitals. Poisson regression with a robust variance estimator was used to obtain adjusted prevalence ratios (PR) and 95% Confidence Intervals (CIs). Additionally, eight in-depth interviews were conducted and analyzed using thematic analysis. Results: Of the 225 women who participated, 74.67 % experienced delayed catheter removal, i.e., > 24 hours after surgery. A significantly substantial amount higher than the international recommendations, highlighting a major gap. Significant factors associated with prolonged catheter use included the presence of comorbidities (PR =1.20; 95% CI: 1.07-1.36; p = 0.002), type of facility (PR = 1.24; 95% CI: 1.03-1.50; p = 0.021), and length of hospital stay (PR = 1.34; 95% CI: 1.09-1.64; p = 0.006) after adjusting for possible confounders. Key barriers addressed include patient and procedure-related clinical complications, the need for fluid input/output monitoring, patient-related physical limitations, staff shortage, and high patient load. Furthermore, facilitators include patient preference, Supportive staff behavior such as use of KY jelly to reduce pain, awareness of early catheter removal benefits, and implementation of catheter protocols and guidelines. **Conclusion and recommendations:** Prolonged catheter use reflects gaps in clinical practice and protocol adherence. Hospitals should adopt standardized protocols to reduce unnecessary catheter use.

290. Mokili, U. (2025). Caesarean section for non-reassuring fetal status and factors influencing early neonatal outcome at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Non-reassuring fetal status (NRFS) accounts for approximately 25.8% of emergency caesarean sections worldwide and contributes substantially to the increasing global caesarean rate. Despite its high prevalence, adverse perinatal outcomes associated with NRFS remain a major concern. However, data on the proportion of caesarean sections performed for NRFS and the corresponding neonatal outcomes are limited in our setting. **Objective:** The aim of the study was to determine the proportion of caesarean section with the indication of NRFS and factors influencing early neonatal outcome at MNH. Methodology**:** An analytical cross-sectional study was conducted among all caesarean deliveries for NRFS at MNH from January 1, 2021, to June 30, 2024. Data were extracted from patient files using a structured tool. Chi-square and

multiple logistic regression analyses were applied to assess associations between socio-demographic, obstetric, and clinical factors with neonatal outcomes. A p-value <0.05 was considered statistically significant. **Results:** Of 7,886 caesarean sections, 1,070 (13.6%) were due to NRFS. Diagnostic features included reduced fetal movements (28.1%), fetal tachycardia (22.0%), multiple diagnostic features (22.0%), meconium-stained liquor (19.1%) and fetal bradycardia (6.4%). Poor neonatal outcomes including stillbirth, score of less than 7 at five minutes, admission and resuscitation occurred in 45.4% of cases. Abnormal umbilical artery Doppler (UAD) significantly increased risk (AOR=13.7; 95% CI: 1.7–110; p=0.016). Hypertensive disorders in pregnancy were also strongly associated with poor neonatal outcomes (AOR=3.09; 95% CI: 1.87–5.12; p<0.001). **Conclusion:** Approximately one in ten caesarean sections were performed for NRFS. Poor neonatal outcomes were significantly associated with hypertensive disorders, abnormal UAD findings and diagnosis based on multiple NRFS features. Correlating several diagnostic indicators with clinical findings improves diagnostic accuracy and neonatal outcomes.

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291. Mollel, C.F. (2025). Diagnostic Capacity of Hematological Malignancies in Public District Hospitals: Health Workers' Perspectives in Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Strengthening diagnostic capacity at the Primary Healthcare (PHC) level is vital for early disease detection and timely treatment. In Tanzania, where PHC facilities are the first contact for most patients, improved diagnostic tools are essential for identifying hematologic malignancies such as leukemia, lymphoma, and myeloma. Limited capacity at this level often causes misdiagnosis, delayed treatment, and unnecessary referrals, burdening the healthcare system. **Objective:** To assess the diagnostic capacity for hematological malignancies in public district hospitals in Dar es Salaam, Tanzania. **Methodology:** The study employed a qualitative case study design using in-depth interviews in data collection. The study purposively sampled 29 participants for interview, including medical officers in charge, laboratory managers, doctors, and clinical officers from 5 public district hospitals in the Dar es Salaam region. Thematic analysis, following Braun and Clarke's (2006) framework, was done to analyze data, facilitated by NVivo software to ensure systematic coding and organization of findings. Findings: The study found that the availability of tools and equipment: While Full Blood Picture (FBP) machines were widely available and functional, the limited use of Peripheral Blood Smear (PBS) tests, advanced tools, and specific Standard Operating Procedures (SOPs) limited comprehensive diagnostic capacity. On experiences in performing diagnostics, providers relied heavily on FBP results but faced diagnostic uncertainty due to inadequate training, limited tools, and high workloads. Also, leadership decisions shaped procurement and training priorities, but frequent prioritization of blood cancer diagnostics and weak feedback systems constrained diagnostic effectiveness. xiii **Conclusion:** This study concludes that despite the availability of Full blood picture machines in

the 5 public district hospitals, there is limited diagnostic capacity for hematological malignancies due to a lack of tools, training gaps, and weak leadership support. To improve early diagnosis, facilities need better equipment, regular staff training, and stronger leadership involvement in procurement and referral feedback systems.

292. Mollel, F.F. (2025). Health Facility Assessment (Hfa) For Management of Severe Acute Malnutrition (Sam) In Dar Es Salaam, Muhimbili University of Health and AlliedSciences.

Abstract

Background: Severe Acute Malnutrition (SAM) is a public health issue affecting children under five years old. In Tanzania, approximately 100,000 children are affected by acute malnutrition, with 4% suffering from severe wasting. The inadequate management of SAM in health facilities significantly contributes to 45% of morbidity and mortality rates among this vulnerable population. **Objective:** This study aims to conduct a Health Facility Assessment (HFA) to evaluate the capacity of healthcare facilities to deliver quality care for children with Severe Acute Malnutrition (SAM). **Methods:** The study employed a quantitative approach through structured surveys administered to healthcare providers in six facilities. Key variables included the availability and training of healthcare personnel, physical infrastructure, essential equipment, nutritional services offered, and data management practices related to SAM treatment. The data management analysis plan was implemented using SPSS for data importation and cleaning, ensuring consistency and correcting errors. Descriptive statistics summarized the data, highlighting the percentage of facilities providing specific nutrition services. **Results:** The study assessed six health facilities. Overall performance varied across levels of health facilities (HC), with Health Facility One (HC1) scoring the highest average (74.8%) and Health Facility Three (HC3) the lowest (40.3%). Human resource training coverage was low across all facilities, ranging from 7.7% to 31.3%, while staff competency scores ranged from 40.0% to 90.0%. Availability of essential nutrition medicines and equipment ranged between 35.7% and 62.6%. Nutrition service delivery scores were highest at Health facility four (93.3%) and lowest at Health facility three (43.3%). Health information system performance was strongest at Health facility one (100%), while others ranged from 60.0% to 70.0%. Notable gaps included a lack of trained personnel, inadequate availability of therapeutic supplies and equipment, absence of reference charts and screening tools, poor infrastructure in nutrition units, and limited documentation and use of nutrition data.x **Conclusion:** This study found major gaps in staff training, availability of essential nutrition supplies, service delivery, and data use across health facilities in Dar es Salaam. To address these, targeted in-service training, improved supply chains, better integration of nutrition into routine care, and consistent data use are recommended to enhance service.

293. Mon'gon'go. (2025). Adherence to national standard treatment guidelines (nstgs) in management of hypertension and associated factors among healthcare providers at public district hospitals in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hypertension affects 15–25% of adults in Tanzania, with less than 30% of treated patients achieving adequate blood pressure control, leading to complications like stroke, heart failure, and renal disease. The National Standard Treatment Guidelines (NSTGs), 6th edition (2021), guide management, but healthcare provider adherence in district hospitals is unclear. **Objective:** To assess healthcare provider adherence to NSTGs in hypertension management in Dar es Salaam's public district hospitals and identify associated patient, provider, and health system factors, including barriers and facilitators. **Materials and Methods:** A mixed-methods cross-sectional study was conducted at five public district hospitals. Quantitative data from 397 patient files assessed adherence in pharmacological treatment, complication monitoring, and comorbidity screening, categorized as complete, partial, or non-adherent. Modified Poisson regression was used to identify patient and provider factors. Qualitative data from 11 in-depth interviews were thematically analyzed for health system factors, barriers, and facilitators. **Results:** Only 26.2% of patients received management with complete adherence to NSTGs, 27.7% partial, and 46.1% non-adherent. Higher healthcare provider adherence was associated with follow-up visits (aPR=5.81), Grade 1 (aPR=3.87) and Grade 2 (aPR=5.06) hypertension, comorbidities (aPR=2.35), specialist providers (aPR=7.00), and provider experience of 5–10 years (aPR=3.25) and >10 years (aPR=3.91). Health system factors included outdated guidelines, absence of comorbidity-specific protocols, limited user input, and weak monitoring. Barriers include drug shortages, inadequate diagnostics, staffing gaps, and inadequate training. Facilitators include peer collaboration, mentorship, accessible guidelines, and continuing medical education. **Conclusion:** Low healthcare provider adherence to NSTGs contributes to poor hypertension control. Interventions like updated and inclusive guidelines, enhanced training, improved resource availability, and peer support are critical to improve adherence and patient outcomes

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294. Mongi, E.G. (2025). Implementation of Accreditation Standards Related to Patient Safety at Aga Khan Hospital, Dar es Salaam: A Process Evaluation Study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Patient safety remains a cornerstone of healthcare quality, emphasizing the prevention of harm and the promotion of safe clinical practices. Accreditation serves as a structured mechanism through which healthcare institutions demonstrate compliance with established standards, ensuring accountability and continuous improvement (1). In 2019, the WHA Resolution urged member states, including Tanzania, to act on patient safety (3). Despite the WHA resolution, still limited empirical evidence exists on how such standards are operationalized and sustained at the institutional level. This study therefore sought to assess the implementation of accreditation standards related to patient safety at Aga Khan Hospital, Dar es Salaam, identifying accreditation requirements and its practical implementation. **Aim:** This study aimed to evaluate the implementation of accreditation standards related to patient safety at Aga Khan Hospital, Dar es Salaam. **Methods:** This was a case study using a qualitative approach accounting for its suitability in thoroughly exploring compliance with accreditation standards concerning patients. Semi-structured questionnaire was used to conduct interviews with hospital stakeholders, including patients, hospital administrators, healthcare professionals (nurses and doctors), and quality

improvement staff who are knowledgeable about and responsible for accreditation standards related to patient safety at the hospital. A sample size of 15 respondents was interviewed; data were collected over a three-month period (April–June 2025). The principle of saturation was used to determine the final sample size. Thematic analysis was employed to identify and interpret key themes and patterns related to procedures, patient safety incidents, policies implementation and factors influencing compliance to accreditation standards related to patient safety interview data. Document analysis on hospital policies related to patient safety was also done. To mitigate bias, data triangulation was done to corroborate findings and enhance the credibility of the study. **Results:** Four major themes emerged: (1) Adequate Implementation of patient safety procedures, (2) Structured Management of patient safety incidents, (3) Systematic Policy development and dissemination, and (4) Influencing Factors Affecting Compliance. Staff demonstrated strong adherence to Standard Operating Procedures (SOPs), consistent use of incident reporting systems, and awareness of JCIA-aligned policies. Leadership support, departmental monitoring, and continuous training were found to enhance compliance, although minor challenges such as staff turnover and limited community awareness affected consistency. Participants (n=15) included six nurses (6), three doctors (3), two administrators (2), three quality officers (3), and one patient representative. **Conclusion:** The study concludes that Aga Khan Hospital has established a mature and structured patient safety culture grounded in JCIA standards. Continuous training, leadership engagement, and policy integration were key enablers of compliance. However, sustainability requires ongoing staff orientation and community awareness programs. Policy/Practice Implication: Strengthening institutional support for continuous quality improvement and enhancing patient engagement can further advance compliance with accreditation standards and patient safety outcomes.

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295. Morawej, N.N. (2025). Prevalence and factors associated with delayed return to pre-injury state among patients with recurrent anterior shoulder dislocation post open latarjet procedure at Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The open Latarjet procedure is a widely used surgical intervention for managing recurrent anterior shoulder dislocations. While this technique is known for its effectiveness in restoring joint stability, a notable proportion of patients experience delayed return to their pre-injury functional state. **Objective:** To determine the prevalence and factors associated with delayed return to pre injury state among patients with recurrent anterior shoulder dislocation who have undergone Open Latarjet procedure at MOI. **Methods:** A hybrid retrospective-prospective cross-sectional analytical study was conducted at MOI among patients aged 18 years and above, who underwent the Open Latarjet procedure at least one year prior to the study period. Data was extracted from the existing Open Latarjet Registry which comprised patient interviews and clinical assessments. The total sample was 73 participants. Variables included sociodemographic factors, pre-surgical and post-surgical characteristics. Data was analyzed using SPSS version 25, employing descriptive statistics and logistic regression models to identify factors independently

associated with delayed recovery. **Results:** The prevalence of delayed return to pre-injury state post Open Latarjet procedure was 27.4%. Factors associated with delayed return to pre-injury state following open Latarjet procedure included employment status, mechanism of injury, and timing of surgical intervention. Unemployed participants had significantly lower odds of delayed return compared to employed individuals (AOR = 0.036, 95% CI: 0.002–0.615, p = 0.022). Trauma-related injuries were also associated with lower odds of delayed return compared to other mechanisms (AOR = 0.026, 95% CI: 0.001–0.863, p = 0.041). In contrast, participants who underwent surgery more than five years after injury had significantly higher odds of delayed return to their pre-injury state (AOR = 4.121, 95% CI: 1.114–15.274, p = 0.032). **Conclusion:** Delayed return to pre-injury state was common after the Open Latarjet procedure and was influenced by employment status, injury mechanism, and surgical timing. Early intervention and individualized care are recommended improve recovery outcomes.

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296. Moses, R. (2025). Access To HIV Testing and Its Related Factors Among Adolescents and Young Adults in Secondary Schools, Njombe Town Council, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV remains a significant public health challenge, particularly among adolescents and young adults in Tanzania. Approximately 1.4% of the age group 15-24 years is living with HIV, whereby young women are disproportionately affected, with higher infection rates than their male counterparts. According to the Tanzania HIV Impact Survey (THIS) 2016-2017, the prevalence of HIV among women aged 15-24 years was around 2.1%, while among men of the same age group, it was around 0.6%. Despite the availability of HIV Testing Services (HTS), uptake among this sub-population in secondary schools is alarmingly low. Understanding the factors that influence HIV testing among adolescents and young adults is critical for developing effective interventions to increase testing rates and reduce HIV transmission. This study therefore, sought to assess the access to HIV Testing Services (HTS) and its associated factors among adolescents and young adults in secondary schools in Njombe Town Council (TC), Njombe region Tanzania. **Methodology:** A cross-sectional study design was employed, mixed with qualitative methods, focusing on adolescents and young adults aged 15-24 years attending secondary schools in Njombe TC. Data was collected using a structured questionnaire for interviews and a discussion guide was used for Focus Group Discussions. The study employed STATA version 17 to analyse quantitative data. Descriptive statistics were applied to summarize the central tendency of the independent variables, while frequencies and percentages were used to summarize data for categorical variables. A modified Poisson regression model was used to predict the relationship between accessibility to HIV Testing and its associated factors. The association of variables with a p-value less than 0.05 at a 95% confidence interval was considered statistically significant. Qualitative data were collected through focus group discussions, audio-recorded, transcribed, and thematically analysed. **Results:** A total of 680 participants were recruited with a mean age of 16.8 years (SD-2.54). Among the participants, 541 (79.56%) had accessed HIV testing services.

Awareness of HIV transmission and prevention was over 95%. Significant facilitators of access included availability of testing sites (aPR: 1.65; CI: 1.11–2.46), ease of access to health facility (aPR: 1.40; CI: 1.01–1.96), community awareness, (aPR 1.20, 95% CI: 1.04–1.38), peer encouragement, (aPR 1.08, 95% CI: 1.01–1.15). low cost of services, (aPR 1.10 (95% CI: 1.03–1.19**)**, family support, use of artists and cinemas. Major barriers included attending private schools (aPR: 4.76; CI: 1.76–12.89), attending school with both male and female students, (aPR 1.77**,** 95% CI: 1.01–3.12) fear of positive HIV test results, social, cultural and religious beliefs, fear of losing friendship and relationships, long distance to services, stigma, and negative attitudes from healthcare providers. **Conclusion:** This study observed a relatively high access to HIV testing and high awareness of HIV transmission and prevention among adolescents in Njombe TC. While access to HIV testing was found to be relatively high, it falls short of the global 95% target. Addressing barriers such as social stigma and provider attitude is critical. Strategies like decentralizing services to schools, youth-targeted awareness programs, and strengthening provider training can enhance testing uptake and contribute to national HIV elimination goals.

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297. Moses, R.M. (2025). Proportion And Factors Associated with Periventricular Leukomalacia Among Very Low Birth Weight Preterm Neonates Admitted at Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Periventricular leukomalacia (PVL) is a common morbidity of the preterm very low birth weight (VLBW) neonates (<1500g). Infants diagnosed with PVL require early neurodevelopmental follow up to improve their outcome. However, with improvement in neonatal care in the country there is limited local data on the burden and associated factors of PVL in limited resource countries. **Broad Objective:** To determine the proportion and factors associated with PVL among VLBW preterm neonates admitted at Muhimbili National Hospital (MNH). **Materials and Methods:** A hospital-based prospective cohort study was conducted among VLBW preterm neonates. Data was obtained from researcher administered interviews, physical examination, review of maternal antenatal cards and neonatal records using a structured questionnaire. Cranial ultrasound was done on day 7 and day 28 to determine the presence and severity of PVL. Data entry and analysis was done using SPSS version 23. Descriptive data were tabulated and summarized using frequencies, proportions median, and interquartile range. Chi square and Fisher's exact were used to measure the association between categorical variables. Variables found to be significantly associated with PVL were analysed by Poisson regression. A p-value of 0.05 or less was considered statistically significant. **Results:** A total of 351 VLBW neonates were enrolled into the study, 190 (54.1%) were females. The proportion of PVL among VLBW neonates was 21.6% and 26.8% on day 7 and 28 respectively with grade 1 being the most prevalent. VLBW infants born to mothers aged 20-35 years and those with premature rupture of membranes (PROM) $\geq$ 18 hours, had significantly higher odds of developing PVL by day 7 of life. None of the factors studied were independently associated with PVL in multivariate analysis by day 28 of life. **Conclusions:** Periventricular leukomalacia especially grade I is prevalent in VLBW preterm neonates despite the advancement in neonatal care. The incidence of PVL at day 7 was higher in neonates who had IVH and those whose mothers had PROM. **Recommendations:** Strategies to

improve perinatal care to prevent PROM and the incidence of IVH may further decrease PVL among VLBW preterm. Future follow up studies should be done to determine the neurodevelopmental outcomes of these infants in our setting.

298. Mosha, T.C. (2025). Prevalence of Malocclusion, Deleterious Oral Habits, and Orthodontic Treatment Needs in 6- to 12-Year-Old Tanzanian Children. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malocclusion is a common developmental oral health problem that can significantly affect a child's function, aesthetics, and psychosocial well-being. Deleterious oral habits such as finger sucking, tongue thrusting, nail biting and mouth breathing have been widely implicated in the development of malocclusion, especially during formative years. Aim: This study aimed to determine the prevalence of deleterious oral habits, assess their association with malocclusion, and evaluate the need for orthodontic treatment among children aged 6–12 years attending the MUHAS dental clinic in Tanzania. **Methodology:** An Analytical cross-sectional study was conducted among 327 children attending the MUHAS dental clinic. Data on oral habits were obtained through structured interviews with parents or guardians. Clinical examinations were performed to identify malocclusion traits and to assess orthodontic treatment need using standardized indices. Data analysis was done by SPSS version 27.0. Descriptive statistics, chi-square tests, and multivariate logistic regression analysis were used to evaluate factors associated with malocclusion and treatment need. **Results:** A total of 327 children aged 6–12 years participated, with a slight boy predominance (56.3%), and most lived at home. The overall prevalence of malocclusion was 68.5%, with increased overjet (31.5%) and crowding (30.0%) being the most frequent types. Other common conditions included midline shift (16.8%) and open bite (15.6%), while scissor bite (2.4%) and mandibular overjet (4.3%) were relatively rare. According to Angle's classification, Class I molar relationship predominated (84.4%), followed by Class II (12.8%) and Class III (2.8%). Deleterious oral habits were prevalent, with finger sucking (29.7%), nail biting (22.3%), tongue thrusting (19.3%), and mouth breathing (16.2%) being most common. Boys generally exhibited higher rates of these habits except for pacifier use. In univariable analysis, nail biting (cOR = 3.20, 95% CI 1.60 – 6.38, $p < 0.001$), mouth breathing (cOR = 2.55, 95%CI 1.19 – 5.45, $p = 0.016$), and finger sucking (cOR = 1.72, 95%CI 0.99 – 2.95, $p = 0.050$) were significantly vi associated with malocclusion. Multivariable analysis confirmed nail biting (aOR = 2.82, 95%CI 1.38 – 5.76, $p = 0.004$) and mouth breathing (aOR = 2.78, 95%CI 1.27 – 6.04, $p = 0.010$) as independent predictors, while finger sucking, tongue thrusting, lip biting, and other habits showed no significant adjusted associations. Orthodontic treatment need was higher among older children (10–12 years) and those with specific habits or malocclusion types. Logistic regression revealed sagittal malocclusion (aOR = 3.69, 95%CI 1.87 – 7.28, $p < 0.001$), nail biting (aOR = 2.55, 95%CI 1.32 – 4.94, $p = 0.005$), and mouth breathing (aOR = 1.94, 95%CI 1.16 – 2.74, $p = 0.007$) as strong predictors of treatment requirement, while transverse malocclusion was inversely associated (aOR = 0.29, 95%CI 0.14 – 0.62, $p = 0.001$). These findings highlight the high prevalence of malocclusion in this population and emphasize the role of nail biting and mouth breathing as significant contributors to both malocclusion and orthodontic treatment need.

Conclusion: The prevalence of malocclusion was high, with increased overjet and crowding being the most common traits among children aged 6–12 years attending the MUHAS dental clinic. Malocclusion was significantly associated with deleterious oral habits, particularly nail biting and mouth breathing. Nearly two out of five children with malocclusion required orthodontic treatment, with sagittal malocclusion, nail biting, and mouth breathing being the strongest predictors of treatment need.

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299. Moshi, E. S. (2025). Operational performance of the surveillance system for public health risk detection at Julius Nyerere International Airport. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Worldwide growth of the population, along with increased movement of travelers, goods, and cargo, has significantly heightened the spread of communicable diseases and exposure to other public health agents. Such movements create substantial public health risks by establishing favorable conditions for the transmission of globally significant diseases from one nation to another. As the volume of international travel continues to expand, so does the risk of disease transmission, making robust surveillance systems vital for safeguarding public health. Improved health screenings at entry points are a public health strategy implemented to facilitate the early identification, prevention, and response to public health threats. **Objective:** This study aimed to evaluate operational performance of the surveillance systems at Julius Nyerere International Airport in identifying public health threats guided by Donabedian's framework of structure, process, and outcome. **Methodology:** A cross-sectional qualitative study was conducted between May and June 2025. Data were collected through 13 in-depth interviews involving port health officers, port health managers from the Ministry of Health, immigration officials, Swissport officers, and cleaning staff. All interviews were transcribed verbatim, translated into English, and analyzed thematically using NVivo (version 14). **Results:** A total of 13 participants were interviewed, the results revealed that JNIA's surveillance system operates effectively in early detection of public health threats. Key strengths included efficient communication and coordination between health officers, the Ministry of Health, and other stakeholders (reported by 10 participants), adherence to standardized screening and reporting protocols (11 participants), and the use of digital tools such as the Afya Msafiri platform to support data collection and feedback (6 participants). However, challenges were identified, including limited coordination with some stakeholders, outdated screening technology, inconsistent training, and manual data collection methods (7 participants). Additional gaps included insufficient data-entry devices, inadequate personal protective equipment, and infrastructural constraints that occasionally delayed timely response to emerging threats**. Conclusion and recommendations:** While JNIA's surveillance system demonstrates solid performance in early detection of health threats, several gaps remain. Short-term recommendations include frequent training, digitization of screening forms with auto-sync capabilities, and improved resource availability. Medium- to long-term recommendations focus on modernizing equipment, establishing a dedicated health zone separate from business areas, defining clear emergency communication chains via digital alerts, conducting joint drills and SOP reviews, and leveraging social media for disseminating information about SOPs and

health risks. Strengthening leadership engagement is also critical to address systemic vulnerabilities and enhance emergency preparedness.

300. Mpambje, P. (2025). Nurses' awareness, attitude, and associated factors on the prevention of contrast-induced acute kidney injury at Bugando Medical Centre, Mwanza Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Acute kidney disease (AKD), including Contrast-Induced AKI (CI-AKI), is a growing burden in Tanzania, driven by infections, non-communicable diseases, and hospital-acquired conditions. Limited resources, inadequate training, and lack of standardized protocols hinder effective prevention, particularly in resource-constrained settings like Bugando Medical Centre, where high AKI mortality rates are reported. Despite rising awareness, data on CI-AKI prevention factors among nurses remain scarce. Strengthening interventions, training, and resource allocation is critical to reducing Tanzania's AKI burden. **Objective:** This study assessed Nurses' awareness, attitude and associated factors on the prevention of contrast-induced acute kidney injury at Bugando Medical Centre. **Methods:** This was a descriptive cross-sectional study involving 279 randomly selected nurses. A structured questionnaire was used to assess awareness, attitudes, and associated factors regarding the prevention of contrast-induced acute kidney injury (CI-AKI). Data were analyzed using SPSS version 23, with categorical variables summarized as frequencies/percentages and continuous variables as means/standard deviations. Bivariate and multivariate logistic regression identified factors influencing CI-AKI prevention, with a p-value <0.05 considered significant. **Result:** The mean age of participants was 35 years (SD ± 8.7), with 48% aged 30–39 and 69.3%% of nurses were unaware of CI-AKI prevention, while 52.4% had negative attitudes. Multivariate analysis revealed that nurses aged between 20-39 years (aOR=0.5, 95% CI=0.27–0.96), those with 6-10 years of experience (aOR=0.2, 95% CI=0.10–0.59), and diploma holders (aOR=0.5, 95% CI=0.29–0.96) were significantly less likely to be aware of CI-AKI prevention. Similarly, nurses with less than 5 years of experience were less likely to have positive attitudes (aOR=0.9, 95% CI=0.47–1.94). **Conclusion and recommendation:** The study revealed concerning gaps in nurses' awareness of CI-AKI prevention, though a notable proportion demonstrated willingness to improve. To address these findings, targeted training programs should be developed focusing on practical prevention strategies for younger and less experienced nurses. Additionally, implementing mentorship initiatives, continuing education opportunities, and clinical support tools would help bridge knowledge gaps and reinforce best practices in contrast procedure areas

301. Mponzi, I. (2025). Considerations of structural prevention of hypertension in urban planning: a case of Kinondoni Municipal Council, Tanzania. Muhimbili university of health and Allied Science.

Abstract

Background: Hypertension is a global public health concern, particularly in low- and middle-income countries. Despite interventions against hypertension in Tanzania, its prevalence continues

to persist, suggesting a gap in addressing other factors such as structural-related risk factors. The urban environment, including the built environment, food environment, and media environment, is crucial in shaping lifestyle choices and hypertension prevalence. To effectively address hypertension in urban areas, a comprehensive approach that considers these factors and integrates them into urban planning processes is needed. Objectives: The study aimed to to explore the consideration of structural aspects related to hypertension prevention in urban planning processes in Kinondoni Municipal Council, Dar es salaam, Tanzania. **Methods:** This qualitative case study employed in-depth interview in the investigation of the considerations of hypertension structural-related risk factors in planning and implementation. The study utilized a qualitative approach, conducting interviews with 20 urban planning stakeholders, including ward executive officers, ward environmental health officers, street executive officers, street chairpersons, health officers, town planners, environmental officers, and municipal trade officers. Participants were selected from four wards representing both planned and unplanned settlements within Kinondoni Municipal Council, Dar es Salaam, Tanzania. Thematic Analysis was employed with the aid of Nvivo V. 15 software. **Results:** The study revealed that community-based initiatives and media campaigns contribute positively by promoting healthy diets, physical activity, and awareness of hypertension risks. However, enforcement of food and urban planning regulations is weak, health stakeholders are often excluded from planning and advertising decisions, and unhealthy food environments persist, particularly in unplanned settlements. These gaps limit the effectiveness of structural interventions for hypertension prevention. **Conclusion:** Despite some positive efforts through community initiatives and media campaigns, the structural prevention of hypertension in urban planning faces more barriers than facilitators. Strengthening enforcement of regulations, integrating health stakeholders in planning and advertising decisions, and expanding supportive community and media interventions are essential to create healthier urban environments.

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302. Mrema, A. (2025). Anatomical variants of frontal sinuses among patients who underwent computed tomography scan of the paranasal sinuses at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The variable anatomy of the frontal sinuses, along with their proximity to the orbit and skull base, presents significant challenges for otorhinolaryngologists performing functional endoscopic sinus surgery (FESS). These challenges are further compounded by the complex, narrow, and often highly variable frontal recess area. A thorough knowledge of these anatomical variations is critical for minimizing intraoperative complications and improving surgical outcomes, yet detailed data on these variants are scarce in our setting. **Objective:** This study aimed to identify the anatomical variants of frontal sinuses among patients who underwent computed tomography scan of the paranasal sinuses at MNH **Methodology:** A retrospective, cross-sectional study was conducted at MNH, analyzing 240 paranasal sinuses computed tomography scans (PNS CT scans) from patients aged 20 years and above. Data on frontal sinus and frontal recess variants, laterality, and demographic characteristics were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Results: This study analyzed 240 PNS CT scans (480 frontal sinuses) from patients aged 20–88 years (median 43), with a male-to-female ratio of 1.4:1. The

medium-sized frontal sinus was the most common variant (210 cases, 43.7%), while aplasia was the least common (21 cases, 4.4%). Medium-sized variants 123(44.2%) were predominant in males, whereas hypoplasia 72(35.6%) predominated in females. Significant sex differences were observed for hyperplasia (p = 0.04), aplasia (p = 0.04), and hypoplasia (p = 0.001). Agger nasi cells were the most common frontal recess variant 447(93.1%) and the only type with a significant sex difference (p = 0.016). Hypoplasia predominated on the right side (46%), hyperplasia on the left (38.8%), while bilateral aplasia (40%) and bilateral agger nasi cells (91.8%) were the most frequent bilateral findings. **Conclusion:** Medium-sized frontal sinus variant was the predominant type, while aplasia was the least. Hypoplasia predominated in females, whereas medium-sized, hyperplasia, and aplasia were more common in males. Frontal sinus variants showed significant sex differences except for the medium-sized type. Among frontal recess cells, agger nasi cells were the most prevalent and the only variant showing a significant sex difference. Most frontal sinus and recess variants were bilateral. **Recommendations:** Accurate identification of these anatomical variants on PNS CT scans is essential, as they may affect the complexity and outcomes of FESS, thereby increasing the risk of disease persistence or recurrence. To enhance generalizability and strengthen the validity of the findings, multicenter studies with larger sample sizes are warranted.

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303. Mrema, A. D. (2025). Anatomical Variants of Frontal Sinuses Among Patients Who Underwent Computed Tomography Scan of The Paranasal Sinuses at Muhimbili National Hospital, Muhimbili University of Health and Allied Sciences.

Abstract

Background: The variable anatomy of the frontal sinuses, along with their proximity to the orbit and skull base, presents significant challenges for otorhinolaryngologists performing functional endoscopic sinus surgery (FESS). These challenges are further compounded by the complex, narrow, and often highly variable frontal recess area. A thorough knowledge of these anatomical variations is critical for minimizing intraoperative complications and improving surgical outcomes, yet detailed data on these variants are scarce in our setting. **Objective:** This study aimed to identify the anatomical variants of frontal sinuses among patients who underwent computed tomography scan of the paranasal sinuses at MNH. **Methodology:** A retrospective, cross-sectional study was conducted at MNH, analyzing 240 paranasal sinuses computed tomography scans (PNS CT scans) from patients aged 20 years and above. Data on frontal sinus and frontal recess variants, laterality, and demographic characteristics were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. **Results:** This study analyzed 240 PNS CT scans (480 frontal sinuses) from patients aged 20–88 years (median 43), with a male-to-female ratio of 1.4:1. The medium-sized frontal sinus was the most common variant (210 cases, 43.7%), while aplasia was the least common (21 cases, 4.4%). Medium-sized variants 123(44.2%) were predominant in males, whereas hypoplasia 72(35.6%) predominated in females. Significant sex differences were observed for hyperplasia (p = 0.04), aplasia (p = 0.04), and hypoplasia (p = 0.001). Agger nasi cells were the most common frontal recess variant 447(93.1%) and the only type with a significant sex difference (p = 0.016). Hypoplasia predominated on the right side (46%), hyperplasia on the left (38.8%), while bilateral aplasia (40%) and bilateral agger nasi cells (91.8%) were the most frequent bilateral findings. **Conclusion:** Medium-sized frontal sinus variant was the predominant

type, while aplasia was the least. Hypoplasia predominated in females, whereas medium-sized, hyperplasia, and aplasia were more common in males. Frontal sinus variants showed significant sex differences except for the medium-sized type. Among frontal recess cells, agger nasi cells were the most prevalent and the only variant showing a significant sex difference. Most frontal sinus and recess variants were bilateral. **Recommendations:** Accurate identification of these anatomical variants on PNS CT scans is essential, as they may affect the complexity and outcomes of FESS, thereby increasing the risk of disease persistence or recurrence. To enhance generalizability and strengthen the validity of the findings, multicenter studies with larger sample sizes are warranted.

304. Mrema, E. E.(2025). Satisfaction with nursing care and associated factors among patients with chronic kidney disease at Muhimbili National Hospital.Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic kidney disease (CKD) is a growing public health burden globally and in Tanzania, leading to increased demand for hemodialysis and quality nursing care. Patient satisfaction is a key indicator of healthcare quality and influences treatment adherence, clinical outcomes, and service utilization. However, limited data exist on the satisfaction of CKD patients with nursing care in Tanzanian settings. **Objective:** To assess patient satisfaction and identify factors associated with satisfaction among chronic kidney disease patients undergoing hemodialysis at Muhimbili National Hospital, Tanzania. **Methods:** A hospital-based analytical cross-sectional study was conducted among 382 CKD patients receiving hemodialysis at MNH between April and May 2024. Participants were selected using simple random sampling. Data were collected using a structured questionnaire adapted from the Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ). Descriptive statistics, chi-square tests, and multivariate logistic regression analyzed the data. A p-value of <0.05 was considered statistically significant. **Results:** The study revealed that 285 (74.6%) patients were satisfied with the nursing care received. Male patients were more likely to be satisfied than females (aOR=5.764, 95% CI: 2.664–12.470, p<0.001). Satisfaction was also significantly associated with living in Dar es Salaam (aOR=4.554, 95% CI: 1.999–10.376, p<0.001), having secondary education (aOR=3.540,95% CI:1.266-9.898, p=0.016) or higher education (aOR=3.764, 95% CI:0.980. 14.457,p=0.054), employed patients were significantly dissatisfied compared to peasants/unemployed (aOR=0.085, 95% CI: 0.019–0.394, p=0.002), and self-employed patients (aOR=0.351, 95% CI: 0.122–1.005, p=0.001), longer duration of CKD diagnosis (aOR=0.240, 95% CI: 0.088–0.659, p=0.006),, fewer hospital admissions (aOR=0.735, 95% CI:6.543-117.562,p<0.001), and absence of comorbid diabetes (aOR=6.586, 95% CI: 2.76215.705, p<0.001) or hepatitis B (aOR=14.961, 95% CI: 3.230–69.300, p=0.001). Age, marital status, HIV status, and hypertension were not significantly associated with satisfaction. **Conclusion:** Although most patients expressed satisfaction with nursing care, notable gaps remain, particularly among female patients, those with comorbidities, and individuals from

305. Mringi, J.R. (2025). Evaluation of practices and associated factors of weaning critically ill adults from mechanical ventilation among the intensive care unit (ICU) nurses in

Muhimbili National Hospital -Upanga and Muhimbili Orthopedics Institute. Muhimbili university of health and Allied Sciences.

Abstract

Background: Mechanical ventilation (MV) is essential for critically ill ICU patients with respiratory insufficiency, but premature or prolonged weaning can lead to complications, increasing morbidity and mortality. Weaning, the process of discontinuing MV and extubation, requires the expertise of critical care professionals to ensure optimal outcomes. **Aim of the study:** The study aimed to analyze past practices and associated factors related to weaning critically ill adults from MV among nurses who worked in the ICU of MNH and MOI. Methodology: An analytical institutional cross-sectional study was conducted among 89 consecutively sampled ICU nurses from MNH and MOI ICUs. An observation checklist and a standardized questionnaire adopted from a previous study were used to assess factors influencing participants' practice. R version 4.5 was used to process and analyze the obtained findings. Frequency and proportions were used to summarize descriptive statistics for categorical variables. To identify factors associated with MV-weaning practices, binary logistic regression analyses were used, with adjusted odds ratio (AOR) and 95% confidence interval. A P-value < 0.05 was used to declare the level of significance. **Results:** The study involved 89 ICU nurses, with a median age of 33 years (29.0, 37.0); 52.8% were male and 47.2% female. Most participants held a Bachelor's degree (51.7%), followed by diploma holders (38.2%) and Master's degree holders (10.1%). Most worked at Muhimbili National Hospital (58.4%) and the rest at Muhimbili Orthopaedic Institute (41.6%). Only 22.5% of nurses demonstrated good overall practice in weaning critically ill adults from mechanical ventilation, while 77.5% had poor practice. Specifically, good practice was seen in assessment of readiness to wean (23.6%), weaning intervention (23.6%), and extubation (20.2%). Only 44.9% had satisfactory overall knowledge, with 40.4% scoring adequately in readiness assessment and SBT, 51.7% in extubation, and 47.2% in protocol use. On the other hand, 66.3% had received ICU-specific training and specific training in weaning patients from MV, but only 41.2% reported using weaning protocols consistently. There were statistically significant connections between knowledge, training, and practice in all categories ($p < 0.05$), but no correlation between protocol usage and practice. ($p>0.05$) **Conclusion:** The study highlights that ICU nurses at Muhimbili National Hospital and Muhimbili Orthopedic Institute generally adhered poorly to recommended weaning practices, with only a small proportion demonstrating exemplary performance. Despite moderate levels of knowledge among some nurses, significant gaps persist in the understanding and application of key weaning procedures. The findings emphasize that adequate training and expertise significantly influence good clinical practice. However, the inconsistent use of available protocols and limited institutional support remain significant barriers.

306. Mrisho, H. H. (2025). Assessment of factors associated with dental and skeletal fluorosis due to consumption of water with high fluoride concentration among communities in the Oldonyosambu and Oldonyowas wards in Arusha District. Muhimbili university of health and Allied Sciences.

Abstract

Background: Fluorosis is a significant health issue in northern Tanzania, particularly in Oldonyosambu and Oldonyowas Wards, where underground water contains excessive fluoride (4.0–38 mg/L), far exceeding the WHO limit of 1.5 mg/L. This exposes communities to dental and skeletal fluorosis, worsened by poverty, lack of safe alternative water sources, and limited use of defluoridation methods. **Objective:** To assess factors associated with the dental and skeletal fluorosis due to consumption of water with high fluoride concentration among the communities in Oldonyosambu and Oldonyowas wards in the Arusha District Materials and Methods: A cross-sectional analytical study was conducted among school children and adults in the Oldonyosambu and Oldonyowas Wards. A total of 486 participants were randomly selected from four villages. The Dean Index, field exercise test, and pre-tested questionnaire were employed to collect data on the prevalence of dental and skeletal fluorosis, the adoption level of defluoridation techniques, and factors contributing to the prevalence of dental and skeletal fluorosis, respectively. **Results:** The participant response rate was 100%. The overall prevalence of dental fluorosis was 87%, and skeletal fluorosis was 28%. The significant risk factors for dental and skeletal fluorosis among the communities in Oldonyosambu and Oldonyowas wards were age, gender, and area of residence (village). Despite the presence of alternative water sources, barriers such as distance, affordability, limited infrastructure, and low household income hinder consistent use of safe water. While some community members were aware of defluoridation methods, the actual adoption remains extremely low (13.9%), primarily due to economic, technical, and informational limitations. Additionally, water scarcity, particularly in dry seasons, exacerbates reliance on unsafe sources with high levels of fluoride. **Conclusion and recommendation:** The results of this study reveal a prevalence of dental and skeletal fluorosis among the communities in Oldonyosambu and Oldonyowas wards in Arusha District. These findings serve as a crucial alert for the Ministry of Water, Arusha District Council, AUWASA, Ministry of Health, NGOs, and Research institutions to develop and review the existing water safety interventions.

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307. Mruma, S. (2025). Evaluating the financial cost of non-communicable disease reimbursements under the NHIF retiree scheme: evidence from two hospitals. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Non-communicable diseases (NCDs) such as hypertension, diabetes, cardiovascular diseases, and cancer impose a significant financial burden on NHIF, particularly for elderly population. NCDs are the leading cause of death globally, responsible for 74% of fatalities. In Tanzania, they account for 34% of deaths, with hypertension and cancer contributing to over half. The increasing prevalence of NCDs among retirees, combined with their lifelong entitlement to healthcare without continued financial contributions, raises concerns about NHIF sustainability. **Objectives:** This study aims to evaluate the financial cost of non-communicable disease reimbursements under the NHIF retiree scheme from 2022 to 2024 at Bochi and Tasakhtaa Hospital **Methods:** A retrospective descriptive costing design was employed, study area was Bochi Hospital and Tasakhtaa Hospital study population was retiree beneficiaries who attended at Bochi and Tasakhtaa during the period of 2022 to 2024, sample size was 3488 visits with 29,443 service items included all eligible claims of retirees with Hypertension, Diabetes and cardiovascular

conditions during the financial year 2022-2023 and 2023-2024. From facility NHIF claims records financial years were selected, on member category retiree was selected then the data was extracted for further analysis. Descriptive statistics summarized disease prevalence and costs, while multivariable linear regression identified cost drivers. Sensitivity analysis tested the effect of ±10% changes in service costs on total reimbursements. **Results:** The overall prevalence of NCD-related claims was 29.76%, with hypertension accounting for 59.7% of cases. Diabetes had the highest average cost per visit (TZS 359,329.8). The total NCD reimbursement cost was TZS 971.99 million. Major cost drivers included service type, quantity of services, unit price, age, and sex. Inpatient and procedural charges contributed the most to costs. Sensitivity analysis confirmed that changes in service costs substantially affected total reimbursements, while NCD type had limited effect. **Conclusion:** NCDs pose a substantial financial burden to the NHIF retiree scheme, with costs primarily driven by service utilization patterns rather than disease type. Strengthening cost-control measures, promoting preventive care, and revising reimbursement policies for high-cost services could improve the scheme's sustainability.

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308. Mselle, D.J. (2025). Accuracy of Emergency Medicine Doctors in Interpretation in CT scans ordered at the Emergency Departments of Muhimbili National Hospital (Upanga & Mloganzila Campus) And Muhimbili Orthopedic Institute. Muhimbili University of Health and Allied Sciences

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Abstract

Background: Computed tomography scans are important in the Emergency Department as they are a quick and highly accurate method of diagnosing various conditions which may need immediate interventions. For this reason, emergency department doctors need to be able to diagnose critical findings on computed tomography as soon as possible. Multiple studies have tried to assess whether emergency department doctors can interpret computed tomography scans adequately but have had conflicting results. As emergency medicine is a relatively new field in low-income countries, data in these settings is sparse. **Methods:** This was an observational prospective cross-sectional study that was conducted in 3 centers. Emergency department doctors completed a questionnaire with their details and their interpretation of the computed tomography scan. The sensitivity and specificity along with negative and positive predictive values was calculated using the radiologist final report as the gold standard. Data was analyzed and inter-rater agreement between the emergency department physician interpretation and the radiologist report was done using a Cohen's kappa statistics. Factor association was based on the final diagnosis with p-value <0.05 being statistically significant. **Results:** This study analyzed 306 CT scans, with head and neck scans comprising 78.1%. Registrars read the highest proportion of scans (47.1%). Diagnostic accuracy was highest for head and neck CTs and lowest for abdominopelvic CTs with sensitivities of 36.0-85.3% and 25-100% respectively. No significant association was found

between diagnostic accuracy and factors such as training, Emergency department experience, or trauma-related presentation. **Conclusion:** Our study found that emergency department physicians demonstrated diagnostic accuracy comparable to radiologists when interpreting head and neck CT scans with lower accuracy in evaluating chest and abdominopelvic CT scans. These findings underscore the importance of further research and the development of focused training to strengthen diagnostic capabilities in these critical areas as well as dedicated policies to address this deficit.

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309. Mshana, M.E. (2025). Assessment of the utilization of monitoring and evaluation results in improving malaria service delivery at Songea Municipal Ruvuma, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Monitoring and Evaluation (M&E) systems play a critical role in enhancing malaria service delivery by generating evidence that informs planning, resource allocation, and program improvement. Despite the established Malaria Surveillance, Monitoring and Evaluation Plan in Tanzania, challenges remain in the effective utilization of M&E results, particularly at the health facilities. **Objective:** This study assessed the role of M&E results in improving malaria service delivery and examined factors influencing the effective utilization of these results within health facilities. **Methods:** A facility-based cross-sectional study was conducted from May to June 2025 in Songea Municipal, Ruvuma Region. A total of 80 healthcare workers from dispensaries, health centers, and the regional referral hospital were selected using a combination of stratified and convenience sampling techniques to ensure representation across different facility levels. Data were collected using structured quantitative questionnaires. Statistical analysis was carried out using STATA software. Descriptive statistics were used to summarize respondent characteristics, along with cross-tabulations. Chi-square tests, as well as bivariate and multivariate analyses, were conducted to examine the relationships between selected independent variables and the extent of M&E results utilization. **Results:** The study found that 41.25% (33) effective utilization of M&E results for decision making in malaria service delivery. Notably, 97.5% of health facilities had designated M&E systems and utilized digital data management platforms such as DHIS2. The healthcare workers' utilization of monitoring and evaluation (M&E) results is significantly influenced by factors such as lower educational level (certificate) was associated with significantly reduced M&E use compared to diploma or higher (AOR = 0.28, p = 0.022). Inadequate M&E budget allocation (AOR = 0.02, p = 0.003) and lack of training (AOR = 0.21, p = 0.014) were also significantly linked to poor utilization. Additionally, irregular training (AOR = 0.12, p = 0.003), weak management support (AOR = 0.09, p = 0.017), lack of M&E result discussions (AOR = 0.11, p = 0.047), and absence of regular review meetings (AOR = 0.09, p = 0.015) were strongly associated with reduced M&E result use. These findings highlight the need for adequate education, funding, training, and institutional support to enhance M&E data utilization for decision-making. **Conclusion:** Effective utilization of M&E results in Songea Municipal remains limited (41.25%) and is significantly influenced by education level, training, funding, and management support. The study recommends strengthening staff training, ensuring adequate budget allocation, and

enhancing regular review meetings to improve malaria service delivery. ***Keywords:*** *Monitoring and Evaluation, Malaria Service Delivery, M&E results Utilization*

310. Msiliwova, L.R. (2025). Prevalence and outcome of acute heart failure among pediatric patients presenting to the emergency department of Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Acute heart failure (AHF) is a syndrome where the heart fails to meet the body's metabolic needs, leading to symptoms like fluid overload and under perfusion. This condition poses significant morbidity and mortality risks, especially in the Emergency departments (EDs). This makes rapid diagnosis and treatment critical. However, there is limited data on AHF and its outcomes in low- and middle-income countries (LMICs). This study aims to determine the prevalence and outcomes of AHF among pediatric patients presenting to Muhimbili National Hospital's ED. Methodology: This was a cross-sectional study among pediatric patients with acute heart failure who presented to the ED of Muhimbili National Hospital from April 2025 to June 2025. A total of 156 eligible patients were consecutively enrolled. Data were collected using a structured case report form via a mobile application, and statistical analysis was conducted using SPSS with logistic regression to identify the predictors of adverse outcomes. **Results:** Among the 156 children, 120 (76.9%) were under five years old, with the majority being female (53.2%). Most participants were from Dar es Salaam (64.1%), primarily referred from other facilities (52.6%). Congenital heart disease was the common comorbidity (41%). The most frequent adverse event was ICU admission (17.9%). Children with severe heart failure (Class IV) had 216 times higher odds of adverse events (AOR 216.71, $p<0.001$), and those with sepsis had increased odds of adverse outcomes (AOR 4.25, $p=0.039$). **Conclusion:** There is a significant burden of AHF in children presenting to the Emergency Department of Muhimbili National Hospital. With a prevalence rate of 5%. The severity of heart failure and sepsis is our independent predictor of adverse events in this population. **Recommendations:** It is essential to train healthcare workers in the ED for the early identification of AHF in children. A similar study should be conducted in referring facilities to identify diagnostic gaps and other factors affecting outcomes to enhance the generalizability of findings. Determine the gap in diagnosis, other factors associated with outcome, and enhance generalizability.

311. Msirikale, I. (2025). Factors associated with intern doctors' knowledge on Pediatric cancer detection in Dar es salaam. Muhimbili university of health and Allied Science.

Abstract

Background: Childhood cancer remains a major global health challenge, particularly in low- and middle-income countries where diagnosis and treatment are often delayed. Early detection is critical and depends on healthcare providers' ability to recognize warning signs. However, limited data exist on intern doctors' knowledge and the factors influencing it in Dar es Salaam Tanzania. Objective: To identify factors associated with Intern Doctors Knowledge on Pediatric Cancer Detection in Dar es Salaam, Tanzania. **Methods:** An analytical cross-sectional study was

conducted among 176 intern doctors using a structured, self-administered questionnaire. The tool assessed demographics, clinical and other exposures, perceptions, and knowledge. Data were analyzed using SPSS with univariate, bivariate, and ordinal regression analyses. A p-value < 0.05 was considered statistically significant. **Results:** Only 23% of interns demonstrated high knowledge, while 67% had moderate knowledge. Greater knowledge was significantly associated with younger age (21–30 years, p = 0.018), more frequent clinical encounters with pediatric cancer cases, and training at national hospitals (p = 0.001). Interns who believed pediatric cancers are less curable than adult cancers were nearly three times more likely to have higher knowledge (AOR ≈ 2.93; 95% CI: 1.23–7.00). Other exposures, such as workshops, family cancer history, and awareness campaigns, showed minimal influence. **Conclusion:** Most intern doctors had only moderate knowledge of childhood cancer detection. Clinical exposure and pessimistic perceptions about curability were key predictors of higher knowledge. These findings highlight the need for enhanced, structured, and perception-sensitive pediatric oncology training to improve early detection and referral outcomes

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312. Msongela, M. (2025). Assessment of Cryptococcal Meningitis Prevalence, Treatments, and Factors Influencing Treatment Choices Among People Living With Hiv In Dodoma and Singida, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Each year, cryptococcal meningitis (CM) is reported to affect over 1 million HIV/AIDS patients worldwide, causing a mortality rate of 15%, with nearly half of these deaths occurring in developing countries. Africa accounts for 75% of these deaths globally. In Dar es Salaam, CM prevalence is about 11.5%. In Tanzania, fluconazole monotherapy has been frequently used despite being contrary to established guidelines and protocols. Understanding this practice is essential for developing targeted initiatives to improve adherence to effective treatment regimens and ultimately enhance patient outcomes. **Objective:** To assess cryptococcal meningitis treatment modalities and factors influencing treatment selection among people living with HIV(PLHIV) in Dodoma and Singida regional referral hospitals (RRHs) in Tanzania. **Methodology:** A hospital-based sequential explanatory mixed methods study was conducted, involving a mixed-methods, cross-sectional study that combined both quantitative and qualitative approaches. Data from 561 patients were retrieved from patients' files, and 17 in-depth interviews were conducted with Healthcare practitioners. Analysis was performed using Statistical Package for the Social Sciences (SPSS) version 27, which included descriptive statistics, chi-square test and multivariate logistic regression model and qualitative data analysis (QDA)-Miner version 6. **Results:** Among 561 participants, 301 (53.7%) were from Facility A. The Majority were female, 309 (55.1%) insurance was in 112 (20%). The Majority of those aged 36 to 55years, 289 (51.5%). The CD4 count of the majority was below 200cells/mm3, 505 (90%). 159 participants (28.3%) were diagnosed with cryptococcal meningitis, primarily via Cryptococcal Antigen testing (96.4%). Among ART defaulters, 108 (31.9%) were diagnosed with CM compared to 223 ART non-defaulters, 51 (22.8%). Only 71 (44.7%) received amphotericin B-based triple therapy and had a significantly better outcome (aPR = 1.499, 95% CI: 1.341–1.677, p < 0.0001). Factors significantly associated with being discharged alive included female sex (aPR = 1.186, 95% CI: 1.091–1.289, p

< 0.001), non-ART defaulting (aPR = 1.198, 95% CI: 1.067–1.346, p = 0.002), and completing induction phase (aPR = 1.499, 95% CI: 1.341–1.677, p < 0.001). Patient on fluconazole monotherapy (aPR=0.72, 95% C.I: 0.62-0.84, p<0.001). Patients who received amphotericin B-based triple therapy had a 39% greater likelihood of being discharged alive as compared to those on fluconazole monotherapy, who had 28% lower likelihood of being discharged alive. Qualitative findings revealed that HCPs opt for the use of fluconazole monotherapy due to guideline interpretation, their preferences, availability of cryptococcal meningitis medications, and financial constraints and insurance coverage. **Conclusion:** The study highlights a high burden of cryptococcal meningitis among advanced HIV patients, underuse of recommended amphotericin B-based triple therapy. Implementation challenges were linked to providers' preferences, drug availability, financial issues with patients and insurance coverage. Inconsistent drug availability, inadequate training on amphotericin B administration, poor diagnostic capacity, and financial barriers to supportive care collectively contributed to persistent use of suboptimal therapy.

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313. Msubi, P. (2025). The potential of locally-made low-calorie diet in reducing cardiometabolic risk factors among type-2 diabetes patients at Temeke Hospital in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Tanzania, like many other low- and mid-income countries, is witnessing a rise in the prevalence of diabetes and other non-communicable diseases. Several factors, including the ongoing nutritional transition, contribute to this rise. Dietary interventions have proved effective in reducing diabetes risk factors and incidence. However, the specific impact of dietary approaches focusing on locally made, low-calorie diets in controlling diabetes is not well established. Aim of the study: To evaluate the potential of locally-made low-calorie dietary intervention in reducing cardiometabolic risk factors among patients with type 2 diabetes (T2D). Methodology: This single-arm, non-randomized pretest-posttest intervention pilot study was conducted at the diabetic primary care clinic at Temeke Hospital, Dar es Salaam, Tanzania. For 12 weeks, participants were instructed to follow a low-calorie diet (1000 Kcal/day) using locally sourced foods calculated based on the Tanzania food composition table. At four-week intervals, Body weight, BMI, Waist/Hip ratio (W/H), fasting blood glucose (FBG), Glycated hemoglobin (HbA1c), Total cholesterol, Low- and High-density lipoproteins (LDL, HDL), triglycerides, and systolic/diastolic Blood Pressure (BP) were measured. A p-value<0.05 in paired sample t-tests, calculated using STATA, was considered statistically significant. Results: This study involved 17 patients aged 20 to 60 with a Body Mass Index (BMI) ranging from 27 to 40 kg/m², diagnosed with T2D within the last 5 years, and undergoing oral medication. After 12 weeks of intervention, there was a significant mean reduction in W/H (0.03, p=0.02), FBG (2.98 mmol/L, p=0.01), total cholesterol (0.55 mmol/L, p=0.01), and diastolic BP (6.8 mmHg, p=0.01). The changes observed in BMI, LDL, HDL, triglycerides, HbA1c, and systolic BP were not statistically significant (p>0.05). Conclusion: This study demonstrates the potential of a locally-made low calorie diet in improving fasting blood glucose, total cholesterol, waist to hip ratio and diastolic blood pressure among overweight and obese T2D patients in Tanzania. The lack of significant changes in the other

parameters studied could be related to relatively short duration of the study. This pilot study paves the way for larger long-term randomized controlled study

314. Msule, S.P. (2025). Antibiotic non-adherence and its associated factors among outpatients attending Mwananyamala regional referral hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Antimicrobial Resistance is a global health threat that is largely attributed to the irrational use of medications, particularly antibiotics. Non-adherence to antibiotics constitutes a significant part of the irrational use of antimicrobials, which occurs when a patient cannot take their antibiotics as prescribed by a healthcare provider. In addressing the growing burden of AMR, a significant number of initiatives have been directed towards tackling the irrational usage of antimicrobials at the health facility and health system capacity, leaving the patient's perspective of antibiotic use underexplored in our setting. **Aim of the study:** This study assessed the prevalence of antibiotic non-adherence and the associated factors among outpatients attending Mwananyamala Regional Referral Hospital. **Materials and Methods:** A cross-sectional study design was used to assess the prevalence of antibiotic non-adherence and the factors associated with it. Through systematic random sampling, 328 patients who attended OPD and were prescribed oral antibiotics were recruited. Non-adherence was measured using the Medication Adherence Rating Scale (MAR-S 10), a validated tool for assessing medication adherence status. Data was analyzed using SPSS version 26 and presented using descriptive statistics. Binary logistic regression was used, and variables with a p-value of less than 0.25 were considered for multivariate logistic regression. For significant factors with p-values less than 0.05, the adjusted odds ratio with a 95% confidence interval was calculated and evaluated. **Results:** This study recruited 328 patients who had a mean age of 44.3 years, with the majority being females (63.7%). At least half were seen at the general outpatient department (OPD) (51.8%), with the majority of the participants being prescribed only one antibiotic (69.8%) and for seven days or more (53%). The prevalence of antibiotic non-adherence was found to be 41.1%. The commonest reason for non-adherence was a busy schedule (73%). Number, frequency, and duration of prescribed antibiotics were found to increase the odds of non-adherence, whereas perceived disease severity was found to have lower odds of non-adherence. **Conclusion:** This study found a 41.1% prevalence of antibiotic non-adherence, primarily influenced by therapy- and disease-related factors rather than socio-demographic characteristics, highlighting the key role of prescription characteristics and patients' perceptions of illness in adherence behavior.

315. Msulukile, J. M. (2025). Adherence To National School Water, Sanitation, And Hygiene Guideline Among Public Primary Schools in Pangani District Council - Tanga Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Access to safe water, sanitation, and hygiene in schools is essential for safeguarding Pupils' health and creating an inclusive learning environment. Achieving the Sustainable

Development Goals by 2030 requires substantial progress in school WASH services. Evidence from low and middle-income countries, including Tanzania, reveals persistent gaps: only 52% of schools provide safe drinking water, 28% have basic sanitation, 12% have functional handwashing stations, and 26% offer menstrual hygiene facilities. This study assessed adherence to the National School WASH Guideline among public primary schools in Pangani District Council, Tanzania. **Methods:** A cross-sectional descriptive study was conducted in 12 public primary schools. Quantitative data were collected through observation checklists and semi-structured questionnaires with teachers. Qualitative data were gathered from 12 focus group discussions with pupils and four School Committees, along with key informant interviews with district officials. Quantitative data were analysed using Stata version 16, while a thematic analysis was used for qualitative data. **Results:** All schools had on-site water sources; however, only 33.3% provided safe drinking water, with half of the schools meeting the recommended girl-latrine ratio, with 41.7% having functional hand hygiene facilities. Waste management was limited, with 58.3% of schools having waste bins. Pupils were knowledgeable about handwashing but reported inconsistent practice. School administrators reported limited financial and community support as barriers to sustained adherence with national School WASH standards. **Conclusion:** Public primary schools in Pangani District demonstrated moderate adherence to the National School WASH Guideline, with critical gaps in water safety, sanitation, hand hygiene, waste management, and institutional capacity. **Recommendations:** Pangani district should invest in water treatment, gender-responsive latrines, and functional handwashing stations. The district should strengthen the capacity of school administrators, engage communities, and provide policy support to ensure consistent hygiene practices in schools. **Keywords**: WASH, water safety, sanitation, hand hygiene, waste management, menstrual hygiene, school.

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316. Msuya, B. (2025). Assessment Of Equity and Determinants in Health Insurance Coverage in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Achieving universal health coverage (UHC) is a crucial global goal, leading countries to reform their health systems to improve service coverage and provide financial risk protection. Health insurance is a promising pre-payment mechanism that can enhance healthcare access and protect individuals from catastrophic expenses. However, its coverage often favours wealthier populations, particularly in low and middle-income countries (LMICs) with limited understanding of the factors driving this inequality. Study. **Aim:** The main objective of the study is to examine the distribution and determinants of health insurance coverage in Tanzania. **Materials and Methods:** The study employed a cross-sectional design utilizing data from the DHS 2022 analysed health insurance coverage among individuals with the sample size 42,119 household members file, data obtained through a stratified two-stage sampling method that involved 629 clusters from both urban and rural areas. Descriptive statistics, chi-square tests for assessing associations, and multivariable logistic regression to identify influencing factors. Variance Inflation Factor were employed to check for multicollinearity issues. A concentration curve and index were used to assess inequalities in health insurance coverage indicating a pro-rich bias. Marginal effects calculated from logistic regression to check the probability of health insurance

coverage concerning various demographic factors. Ethical clearance and consent waiver were granted by MUHAS IRB. **Results:** The study found that 7.5% of respondents in Tanzania had health insurance coverage, indicating a significant gap in financial protection against healthcare costs. Among the insured, 58.3% were enrolled in NHIF, while 32% utilized the iCHF. Significant disparities were evident with coverage disproportionately favouring wealthier individuals, urban resident's populations and those with higher educational attainment. Vulnerable populations particularly those in rural areas, faced substantial barriers to accessing health insurance highlighting ongoing disparities in health equity. **Conclusions and recommendations:** Overall the distribution of health insurance coverage exhibits a pro-rich trend and varies significantly across socio-demographic factors. The study recommends that the government prioritize targeted financial support mechanisms, subsidize premiums, enhance health insurance education and literacy among the population and implement policy reforms aimed at achieving universal health coverage and ensuring equitable access to healthcare for all citizens.

317. Msuya, J. (2025). Evaluation of compliance with the 2018 standard operating procedures for external beam radiotherapy at Ocean Road Cancer Institute. Muhimbili university of health and Allied Sciences.

Abstract

Background: Cancer is one of the leading causes of morbidity and mortality worldwide. External Beam Radiotherapy (EBRT) plays an important role in cancer management, but following standard operating procedures (SOPs) is essential for safe and effective treatment. In Low- and Middle-Income Countries (LMICs) including Tanzania face challenges such as limited resources and insufficient training that hinder SOP compliance, hence compromising patient safety. Due to the high number of cancer cases annually, the Ocean Road Cancer Institute (ORCI) has introduced SOPs for radiotherapy which has necessitated evaluation of their adherence to improve care quality. Objective: This study aimed to evaluate the compliance with the 2018 standard operating procedures for external beam radiotherapy at Ocean Road Cancer Institute. **Methods:** This cross-sectional study, which was conducted from January to June 2025, both quantitative and qualitative approaches. A total sample of 340 outpatients were selected by using a simple random sampling technique at ORCI, while healthcare workers at the hospital were selected by purposive sampling. An observational checklist and in-depth interview guide were used for data collection. Quantitative data were analyzed using STATA software version 16.1 and then was presented into tables, graphs and adjusted odds ratio. Qualitative data were analyzed using inductive thematic analysis with organization of codes and categories using NVivo 12.0 software. **Results:** Quantitative findings showed 81% average compliance in patient treatment procedures, 78.2% in treatment planning and 87.8% in documentation, with significant associations between compliance and factors such as day type and work shift. Qualitative findings identified organizational, guideline and provider-related factors affecting compliance with the 2018 SOP at ORCI, including limited infrastructure, highlighting the need for systemic and professional improvements. Conclusion and recommendations: The study found that compliance with the 2018 SOPs for EBRT at ORCI was generally high with strong adherence in treatment planning and documentation, but moderate in-patient treatment procedures, especially during weekdays and night shifts due to staff shortage,

high work load, and limited infrastructure. To address these challenges, the study recommends improve work force, enhancing staff training, and investing in equipment.

318. Mteza, E.F. (2025). Lived experience of men seeking infertility services with their partners at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Infertility is a major global health issue, affecting around 17.5% of adults. It is defined as the inability to achieve pregnancy after 12 months of regular, unprotected intercourse, and includes both primary and secondary infertility. The World Health Organization estimates that infertility affects one in six individuals of reproductive age. An increasing number of couples are turning to fertility treatment, which is 8% to 12%. In Africa and Central Europe have the highest infertility rates, with the "African Infertility Belt" responsible for about 43%. There is a need for more research to be done on how men experience the infertility journey. **Aim of the study:** This study explored the lived experiences of men seeking infertility services with their partners at Muhimbili National Hospital in Dar es Salaam, Tanzania. **Materials and methods:** A phenomenological qualitative study design using in-depth interviews was employed to understand the lived experiences of men seeking infertility services with their partners who attended Muhimbili National Hospital in Dar es Salaam, Tanzania. The interview was semi-structured, and the information was audio-recorded. Purposive sampling techniques were used to select men who attended at Muhimbili Gynecological Outpatient Department (GOPD) and Samia IVF Center. The data saturation principle was used to determine the sample size. Data analysis was done using deductive thematic analysis. **Findings:** The study revealed five themes: sociocultural and relational pressures, health seeking behavior and use of fertility services, barriers to access and quality of care, psychological distress and emotional confusion and coping and emotional regulation. In sociocultural and relational pressures, three subthemes were identified. These are i) cultural norms and gendered expectations, ii) spiritual beliefs, stigma, secrecy, and social isolation iii) Family and interpersonal pressure. Another theme is health-seeking behavior and use of fertility treatment. In this theme, two subthemes were revealed, namely i) Motivators and decision-making ii) Use of services and treatment modalities. The third theme is barriers to vi access and quality of care, where under this theme, three subthemes were revealed: i) Accessibility and cost ii) experiences with healthcare provider’s iii) psychological barriers. The fourth theme is psychological distress, and two subthemes were identified: i) Persistent overthinking and mental exhaustion ii) emotional distress and psychological impact of childlessness. The fifth theme is emotional confusion and coping, and emotional regulation, and three subthemes were identified i) motivational suppression and isolation ii) religious and spiritual coping iii) acceptance and meaning-making. **Conclusion:** Men seeking infertility services at Muhimbili National Hospital face deep sociocultural and psychological challenges. Masculinity is strongly tied to fatherhood, making infertility a source of stigma, shame, guilt and social withdrawal. Despite this, many find resilience through partner support, family encouragement, and spiritual faith. The study recommends training healthcare providers in basic counseling to support emotional wellbeing. Psychologists should be integrated into infertility care, especially for men with malefactor

infertility. Community leaders and religious figures should be engaged to help reduce stigma. Addressing male infertility requires a holistic approach that combines medical care with culturally sensitive psychosocial support.

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319. Mtinda, N.H. (2025). Perceptions And Barriers to Human Papillomavirus Vaccine Uptake Among Parents of Female Adolescents in Mbeya Rural District in Mbeya Regional Qualitative Explorative Study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Human Papillomavirus (HPV) is a leading cause of cervical cancer, particularly in low- and middle-income countries (LMICs), including Tanzania, where preventive measures are often inadequate. Cervical cancer ranks as the fourth most common cancer among women worldwide. It is the leading cause of cancer-related deaths among females in Tanzania, with 10,241 new cases diagnosed each year, leading to 6,625 deaths in 2022. The HPV vaccine, proven by the WHO to prevent up to 90% of HPV-related cases, represents a vital public health intervention. Tanzania reported a 65% uptake among adolescent girls, but many had not completed the full two-dose regimen; reasons included inadequate information (60%), fears about side effects (14%), and parental refusal (11%). There is limited information on the perception and barriers of parents to female adolescents' HPV vaccine uptake in Tanzania. Therefore, this study explores parental perceptions and barriers regarding HPV vaccine uptake in the Mbeya Rural District. **Aim of the study:** This study explored the perceptions and barriers to human papillomavirus (HPV) vaccine uptake among parents of female adolescents in Mbeya Rural District, located in the Mbeya Region of Tanzania. The findings are intended to guide the development of targeted strategies that support the WHO goal for eliminating cervical cancer by 2030. **Materials and Methods:** This study employed a case study design with a qualitative approach to explore parents' perceptions and barriers to HPV vaccine uptake among female adolescents in Mbeya Rural District. A total of 20 participants were purposefully selected from among parents of female adolescents. Data were collected through in-depth interviews, guided by semi-structured interview frameworks. The interviews, conducted in Kiswahili, examined parents' awareness, perceptions, facilitators, and barriers related to HPV vaccination. The data were analyzed using a combined inductive–deductive thematic analysis approach. **Results:** Parents demonstrated varying levels of understanding regarding cervical cancer and the purpose of the HPV vaccine. Some participants confused the HPV vaccine with other immunizations, such as those for COVID-19 or polio. Misinformation and misconceptions were common and contributed to negative perceptions and fear of vaccine side effects. Facilitators for successful HPV vaccine uptake included positive attitudes toward the vaccine, well-organized community mobilization efforts, and supportive religious influences. Despite these enablers, several challenges were identified. These included ineffective community engagement, inconsistent vaccine availability, and parental resistance driven by fear and misinformation, religious distrust, cultural beliefs surrounding vaccination, and general mistrust in biomedical systems. Nevertheless, many parents expressed interest in vaccinating their daughters, recognizing the potential health benefits. To improve uptake, parents recommended addressing community concerns, increasing public awareness, strengthening the health care system, and fostering community engagement to enhance vaccine preparedness. **Conclusion:** Although some

parents understood the vaccine's importance in preventing cervical cancer, many were influenced by misinformation, cultural beliefs, and distrust in the healthcare system. Key barriers included limited knowledge, weak community engagement, and inconsistent vaccine availability. Conversely, school-based education, positive religious messaging, and trust in healthcare providers supported vaccine acceptance. The findings highlight the need for community-led strategies to address HPV vaccine coverage. **Recommendations:** To enhance HPV vaccine uptake among female adolescents, the study recommends improving provider-parent communication, integrating vaccine education into routine health services, and strengthening school-health facility coordination. Policy measures should direct parental involvement in school-based campaigns, include HPV education in school curricula, ensure consistent vaccine supply, and engage community and religious leaders in advocacy. Future research should explore adolescents' and male parents' perspectives to better inform intervention strategies.

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320. Mtopwa, L.S. (2025). Factors associated with Compliance to Oral care protocol in preventing Ventilator-Associated Pneumonia among Intensive care unit Nurses in the Mtwara Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Ventilator-associated pneumonia (VAP) is a serious complication that affects patients in intensive care units (ICUs) who are on mechanical ventilation for at least 48 hours. Oral care in the ICU is a crucial intervention that has been proven to help prevent VAP. Despite the importance of oral care, not all ICU nurses consistently implement this procedure or adhere to the recommended level of care. **Objective:** To assess the factors associated with compliance with Oral care protocols in preventing VAP among nurses in Mtwara Region. Methods: An Analytical cross-sectional study design was used. This study, involved 107 nurses working in ICU and emergency at Ligula Hospital and South Zonal Hospital in Mtwara Region. Respondents were recruited using the Convenience non-probability sampling technique. Data were collected using a structured, pretest questionnaire that assessed socio demographic factors, knowledge, practice and institution support to oral care protocols and compliance indicators. Descriptive and inferential statistics were analyzed using SPSS version 25, with significance set at $p< 0.05$. **Results:** The majority of nurses reported suboptimal compliance with oral care protocols. Nearly half failed to use recommended products (43.9%) or provide oral care to all ICU patients (46.7%). 42.1% were unfamiliar with the protocols, and 56.1% had no recent training. Female nurses showed poor adherence (APR = 0.968; 95% CI: 0.916–1.023; p = 0.044). Those with certificates or diplomas had poorer compliance than bachelor's degree holders (APR = 1.128; 95% CI: 1.022–1.246; p = 0.017). Inadequate knowledge and lack of feedback were also linked to poor compliance (APR = 0.820 and 0.673 respectively; $p < 0.01$). **Conclusion:** This study found that the overall compliance rate with oral care protocols among ICU nurses was poor. Compliance was significantly associated with gender, knowledge, institutional support and educational level, strengthening these factors may enhance the quality xii of oral care provided to intubated patients, reducing the risk of complications such as ventilator associated pneumonia and improving overall patient outcomes in critical care settings. Recommendations: Regular, hands-on training should be provided to all ICU nurses, with a focus on enhancing practical skills, especially for those with a certificate or diploma. Additionally,

professional development programs should address gender and education-related differences in compliance to promote consistent, high-quality care.**KEY WORDS:** Ventilator-associated pneumonia; Oral care protocols; Nurse; intratracheal intubation; Compliance; ICU; VAP prevention protocol.

321. Mtui,N. A.(2025). Current practices and potential barriers to the use of emergency point of care ultrasound among medical doctors at emergency medicine departments in Tanzania Muhimbili University of Health and Allied Sciences.

Abstract

Background: Globally, emergency medicine (EM) recognizes the potential of emergency Point of Care Ultrasound (ePOCUS) to enhance clinical decision making, guide invasive procedures safely and reduce the time to diagnosis, potentially improving patient outcomes. However, its adoption in emergency departments (EDs) varies widely, particularly in low-resource settings like Tanzania. **Aim of the study:** This study aimed to investigate the current practices and potential barriers to the use of ePOCUS among medical doctors in EDs in Tanzania.**Methodology:** A cross-sectional descriptive study was conducted among medical doctors working in public EDs in regional referral, zonal and national hospitals across Tanzania from April 2025 to May 2025. Data was collected using an electronically distributed structured questionnaire via the REDCap platform adapted from previously published ePOCUS utilization studies and tailored to Tanzanian context which was piloted for clarity. It captured social demographics, quantitative data on ePOCUS training, frequency of usage, applications and perceived barriers. Data were analyzed using SPSS version 27.0 employing descriptive and inferential statistics. Outcome measures included ePOCUS training status, frequency of use, and perceived barriers.Results: Of the 522 eligible participants, 378 responded (74.7%). Median age was 30 years; 77.2% were registrars and 10.3% EM specialists. While 74.1% reported using ePOCUS, only 45.8% had received training and 25.4% held formal certification. The most frequently performed applications were focused assessment and sonography in trauma (FAST) 95.7%, inferior vena cava (IVC) ultrasound for volume assessment 73.9%, and lung ultrasound 70.7%. Only 37% reporting confidence in their ultrasound skills. Major barriers to the use of ePOCUS included inadequate training (78%), limited equipment availability (42%), and lack of ePOCUS incorporation into guidelines (44%). **Conclusion:** ePOCUS is widely used by medical doctors in Tanzanian EDs, but formal training and confidence are limited. Barriers related to training, equipment, administrative support, and guideline integration must be addressed to optimize utilization.

322. Mugini, L. E. (2025). Nutritional and other maternal factors associated with low birthweight in Urban Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Low birthweight (LBW), defined as a birth weight below 2,500 grams, remains a major public health concern globally, contributing to neonatal morbidity and mortality. In Tanzania, the LBW prevalence remains high despite urban improvements in antenatal care (ANC). While maternal nutrition and depression are independently linked to fetal growth outcomes, their influence on low birth weight in Tanzanian settings is under-researched. This study assessed the association of nutritional and other maternal factors with low birthweight among neonates born to women attending antenatal clinics in Dar es Salaam Methods: A secondary data analysis of 8,404 participants from a randomized calcium supplementation trial conducted between 2019 and 2022 was conducted. Sociodemographic characteristics were collected by using a structured questionnaire, data on maternal nutrient intake were collected using 24-hour dietary recalls, while depression was assessed in the first trimester using the PHQ-9. Logistic regression was used to evaluate the association between independent variables and low birth weight while adjusting for potential confounders. **Results:** The prevalence of low birthweight in this study was 7.1%. Adequate folate intake was associated with decreased odds of low birth weight (AOR = 0.963; 95% CI: 0.809–1.145). Adequate iron intake showed a significant association (AOR=0.94, 0.747-1.183), with lower odds of LBW. However, Vitamin B12 was not significantly associated with low birth weight (AOR=0.859, 0.688-1.072). Depressed mothers had higher odds of delivering low-birth-weight infants (AOR = 1.433; 95% CI: 0.828-2.481). **Conclusion:** Adequate intake of folate and iron was associated with reduced LBW risk, reinforcing the need for strengthened nutritional interventions in ANC. Also, depressed mothers although not statistically significant, had higher odds of delivering low-birth-weight infants, therefore maternal depression remains a potential risk factor and warrants continued screening and deliberate interventions at ANC.

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323. Mukhtar, M. (2025). Refractive Status Variation and Associated Factors Among Pregnant Women Attending Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Refractive errors are major causes of visual impairment, affecting millions globally. Elevated estrogen and progesterone can cause fluid retention in the eye, potentially leading to nearsightedness. Uncorrected refractive errors can lead to significant visual discomfort and an overall decrease in quality of life. Despite frequent reports of visual disturbances among pregnant women, no local data exist on refractive changes during pregnancy. **Aim:** To assess the variation in refractive status and its associated factors among pregnant women attending antenatal clinics at Muhimbili National Hospital. Materials and methods: A Longitudinal study was conducted for six months, involving first-trimester pregnant women. Participants were recruited consecutively and assessed for demographic and clinical factors through questionnaires, and eye exams were done at 10–12 weeks and 32–34 weeks' gestation. The Wilcoxon test was used to assess the changes in refractive error. Modified Poisson regression models using generalized estimating equations to assess associations, with significance set at $p < 0.05$. **Results:** Of 204 recruited women, 174 completed follow-ups. The median age was 32 years (IQR: 30–35). The most common presenting

ocular symptom was blurry vision, 21(43.1%). The majority, 140(68.6%), had refractive error at baseline, with hyperopia being the most common refractive error, 61(29.9%). In the third trimester, 132 (75.9%) had refractive errors, with myopia being the most common, at 65 (37.4%). There was a significant median change (-0.25D) in refractive error between the first and third trimesters ($p < 0.001$). A family history of refractive error, previous refractive error, and being a housewife showed a significant association with a change in refractive error. **Conclusion:** Refractive status varies significantly as the pregnancy advances to the third trimester. The changes may be associated to previous errors, family history of refractive error or prolonged near work such as among housewives. These changes, although often physiological, can impact visual function and quality of life during pregnancy. Pregnant women should be counselled on the temporary nature of the condition.

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324. Munyeri, N.N. (2025). Renal Sonographic Patterns Before Initiating Chemotherapy Among Women Diagnosed with Cervical Cancer at Ocean Road Cancer Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer is among the most common cancers in women worldwide, ranked fourth, responsible for more than 200,000 deaths annually. Acute Kidney Injury (AKI) is among the most expected outcomes before and during the management of cervical cancer under chemotherapy. Sonographic detection and evaluation of AKI is a crucial step towards reducing the risk of chronic renal diseases for patients with cervical cancer before initiation of chemotherapy. **Objective:** To assess the role of ultrasound in detecting and characterizing renal abnormalities in patients with cervical cancer before starting chemotherapy at Ocean Road Cancer Institute. **Methods:** This randomized, hospital-based cross-sectional study was conducted at the Ocean Road Cancer Institute in Dar es Salaam, Tanzania. The study involved a total of 243 patients newly diagnosed with cervical cancer. Patients meeting the inclusion criteria were randomly selected and assigned study numbers for participation in the study. The selected participants were interviewed using a developed and pretested questionnaire deployed by Open Data Kit (ODK). Their demographic characteristics were recorded directly into the questionnaire, comorbid diseases and renal function test results were recorded from the hospital reporting system, and sonography findings were also recorded from the ultrasound report upload and verified on the day of hospitalization. Independent variables such as demographic characteristics, comorbid diseases, and renal function results were analyzed at the univariate level and presented in descriptive statistics (percentages and frequencies). The relationship between demographic characteristics, comorbid diseases, renal function results, cancer stage, and renal sonographic findings was tested by the Chi-square test, with the significance set at a p-value less than 0.05. **Results:** The majority of the participants were middle-aged adults (40-59 years), accounting for more than half of the study population (63.5%), many were married (79.8%), and had more than 5 children (42.1%). Family history of cancer was not common (86.9%), while the majority did not smoke or consume alcohol. Overweight was recorded in 26.2% of the study population. Hypertension and HIV/AIDs were the most common comorbidities (26.60% and 23.80%, respectively). Most of the cervical

cancers were in stage II. Decreased urine output xiii was a more frequent renal symptom, while 45.2% had abnormal creatinine levels. Hydronephrosis and hydroureters were the predominant renal sonographic patterns in the study population (39.3% and 5.2%, respectively). Marital status and BMI were significantly associated with hydronephrosis and hydroureters' renal sonographic patterns (p-value <0.05). **Conclusion:** Renal impairment was observed in the study population, indicating the importance of effective screening procedures before the initiation of chemotherapy. Marital status and BMI were the demographic characteristics that presented a significant association with hydronephrosis and hydroureters as observed in the ultrasound.

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325. Mushi, B.C. (2025). Satisfaction with nursing care and its associated factors among patients with cancer admitted at Ocean Road Cancer Institute Dar es salaam Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cancer remains a leading cause of morbidity and mortality globally, with Sub Saharan Africa experiencing an increasing incidence. Patient satisfaction with nursing care serves as a key indicator of healthcare quality and has been linked to patient outcomes, including treatment adherence, symptom management, and psychosocial well-being. Nursing care also fosters trust and open communication between patients and healthcare providers, encouraging patients to report problems early and enabling healthcare providers to improve services. In Sub Saharan Africa and Tanzania, little is known about the level of satisfaction with nursing care among hospitalized patients with cancer, despite nurses is a key role in cancer management. However, limited research exists on satisfaction with nursing care among cancer patients at Ocean Road Cancer Institute, Dar es Salaam Tanzania. **Objective:** This study aimed to determine the level of satisfaction with nursing care and its associated factors among patients with cancer in Dar es Salaam Tanzania. **Methods:** A cross-sectional hospital-based study was conducted among patients with cancer admitted at Ocean Road Cancer Institute (ORCI). Simple random sampling was used to recruit 120 cancer patients. Data were collected using a structured questionnaire adapted from the Patient Satisfaction Nursing Care Quality Questionnaire tool (PSNCQQ). Descriptive and inferential statistics were used to analyze the data. Result: A total of 120 cancer patients participated with a response rate of 100%. The mean age was 47 years with a standard deviation (SD) of ± 11 years. Most 68 (56.7%) respondents were female while 56 (46.7%) were peasants. Clinically, 83 (69.2%) had been diagnosed within 13 months, 88 (73.3%) had ≤2 hospital admissions, and 67(55.8%) were hospitalized for ≤10 days. Most 49 (40.9%) received both chemotherapy and radiotherapy, and 92 (76.7%) were HIV negative. Overall satisfaction with nursing care was 87.5% of patients were categorized as satisfied. vi Diagnosis duration ($\chi^2 = 4.20$, $p = 0.04$) and hospital stay length ($\chi^2 = 4.20$, $p = 0.04$) were significantly associated with satisfaction. Sociodemographic factor was not significantly associated with satisfaction ($p > 0.05$). **Conclusions:** –The study revealed that the majority of patients with cancer (87.5%) were satisfied with the nursing care they received, highlighting the positive impact on nursing care at Ocean Road Cancer Institute. This suggests that nurses are effectively meeting patients care expectations in areas like communication, emotional support and responsiveness. Despite the overall positive outcomes, continuous improvement is still necessary to sustain patient satisfaction. **Keywords:**

Cancer, Nursing care, Patient Satisfaction, Tanzania, Sub-Saharan Africa

326. Mushi, D.A (2025). Assessment of caregivers' perspective on HIV early infant diagnosis among HIV exposed infants at Nanyamba Town Council, Mtwara-Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV early infant diagnosis (HEID) is crucial for initiating treatment promptly and improving health outcomes for HIV-infected infants. Despite its importance, the uptake of HEID remains significantly low in Tanzania. This study aimed to explore caregivers' perspectives on the use of HIV early infant diagnosis among HIV-exposed infants. **Objective:** To assess caregivers' perspectives on HIV early infant diagnosis among HIV exposed infants. **Materials & Methods:** This study employed a qualitative research design using a phenomenological approach. In-depth interviews were audio recorded with 10 adult caregivers of HIV-exposed infants, purposively recruited. Interviews were transcribed verbatim, translated into English, and analyzed through thematic analysis. **Results:** The perspectives on HIV early infant diagnosis among caregivers were centered on three themes. Firstly, the perceived risk of HIV transmission, where the majority of participants reported the presence of a risk of transmitting HIV to exposed infants during pregnancy, delivery and breastfeeding. A few believed that transmission of HIV to exposed infants is God's plan regardless of whether the mother adheres to ART use or not. Secondly, despite the belief that HEID is helpful for decision-making and reducing rumours, fear of stigma and discrimination was expressed. Thirdly, caregivers felt capable to ensure earlier infant HIV testing through HEID education and family encoura nt but were discouraged by the lack of paternal involvement, fear of the testing process, te ılts, and suspicious people in the community. **Conclusion:** Despite recognizing the risk of mother to child HIV transmission and the importance of early infant diagnosis, caregivers' decisions to HEID uptake were often constrained by stigma, discrimination, limited paternal support, fear of testing and its results, and as well as suspicion of community members.

327. Mushi, M. A. (2025). Health-related quality of life in children with severe to profound sensorineural hearing loss post cochlear implantation at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Ranking on the fourth place, hearing loss is a major contributor of disability worldwide with astronomical financial implications. Cochlear implant (CI) is increasingly used to rehabilitate deaf children. Studies show significant improvement in psychosocial well-being and oral language development in children with bilateral deafness post CI surgery. Through the CI program at Muhimbili National Hospital cochlear implants have become a successful treatment option for deaf children in Tanzania, thus the number of implantations is expected to rise in the coming years. A health-related quality of life study is optimal in identifying the overall impact of the device since specific areas such as education, social relations and communication are evaluated. **Objective:** This study aimed to assess the health-related quality of life in children with

severe to profound sensorineural hearing loss post cochlear implantation at Muhimbili National Hospital. **Materials and Methods:** This was a hospital-based cross-sectional study that included parents/caretakers whose children had undergone CI surgery at Muhimbili National Hospital. Study participants filled a validated and adapted CI-specific "Children with Cochlear Implants: Parental Perspectives" questionnaire and indicated their level of agreement with each statement using a 5-point Likert scale, ranging from 1'strongly disagree' to 5'strongly agree'. Scores more than three were considered favorable. They also provided demographic data. Data analysis was done using Statistical Package for Social Sciences (SPSS). Descriptive statistics were done and Spearman rank correlation was used for continuous independent variables. For categorical independent variables, an independent t-test was used to compare two groups and analysis of variance (ANOVA) with Bonferroni post hoc test was used for three paired comparisons, p-values of less than 0.05 were considered statistically significant. **Results:** A total of 56 study participants were recruited, who represented children aged between 3-12.4 years. Female to male ratio was 1:1 and a majority of them had unilateral CI (85.7%). Average age at CI surgery was 4.23years (SD=1.03) and mean duration of CI use was 3.49(SD=1.96) years. High scores of qualities of life for children with CI were reported, with self-reliance scoring highest and effects of CI surgery scoring lowest among the sub-domains. Age, duration of CI use and unilateral CI had significant association with communication and general function sub-domains. **Conclusion:** Parents/caretakers of children with cochlear implants perceive their children to have good quality of life, especially their improved independence and confidence. However, they considered the whole process of CI surgery to be troublesome. Older children, children with longer CI use and those with one cochlear implant had improved communication, engagement and awareness in their surroundings. **Recommendations:** Comparison studies between children and parental responses on the quality-of-life post CI surgery are needed for well-rounded conclusions. Longitudinal assessment of the quality of life of children post cochlear implantation will inform physicians and public health stakeholders on what to expect after years of CI use, thus showing the need for continued government support for this intervention and local capacity building.

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328. Mushi, M. J. (2025). Prevalence and associated factors of depression among elderly persons attending the general outpatient clinic at Mwananyamala Regional referral hospital, Dar es salaam. Muhimbili university of health and Allied Science.

Abstract

Background: The world's population is increasingly aging and with it, there is an increasing burden of chronic illnesses. Depression is one of the most common mental health disorders among the elderly population and is of public health concern affecting 7% of elders globally and accounting for 7.5% of all years lived with disability. Despite its effects, no studies have been done yet in Tanzania on elderly depression in a clinical setting. **Objectives:** The objective of this study was to determine the prevalence and the associated factors of depression among elderly persons attending the general outpatient clinic at Mwananyamala Regional Referral Hospital. **Methods and materials:** A hospital-based cross-sectional study was conducted among elderly persons attending the general outpatient clinic at Mwananyamala Regional Referral Hospital in Dar es

Salaam. The sample size was 343 and a systematic sampling technique was used to recruit participants. The tools used were: a semi-structured questionnaire for sociodemographic characteristics, Modified Barthel Index assessed physical ability to perform activities of daily living, the Oslo-3 Social Support Scale for social support, and 15- item Geriatric Depression Scale assessed depression (Cronbach's alpha = 84.3%). Data analysis was done using the STATA version 17. A bivariable analysis determined the association between the independent and dependent variable and those with a p-value < 0.2 (age, sex, marital status, education level, current employment status, chronic illness and physical disability in activities of daily living) were entered into multivariable logistic regression analysis. The p-value of < 0.05 was statistically significant and the odds ratio was used to measure the strength of the association. **Results:** A total of 343 elderly people participated in the study, with 160(46.7%) and 183 (53.3%) males and females respectively. The mean age was 68.8 (SD 6.4%). The prevalence of depression was 29.2% in the study. Sex, age, marital status, educational level, employment status, comorbid chronic illness and physical disability in activities of daily living had a p-value of <0.2 in the bivariable analysis. In the final multivariable analysis, age ≥ 75years (AOR 2.39 CI (1.15-4.96) p-value 0.019), having a college/university level of education (AOR 0.32 CI (0.13-0.82) p-value 0.018), being unemployed (AOR 2.54 CI (1.22-5.30) p-value 0.013), having a chronic illness (AOR 3.2 CI (1.48-7.24) p-value 0.003) and dependence in ADL (AOR 6.46 CI (3.17-13.19) p-value <0.001 had statistically significant association with depression. **Conclusion:** The study revealed that depression is common in the elderly outpatients and factors like increasing age, being unemployed, having a chronic illness and being dependent in ADL had an association with depression whereas, having a college/university level education was protective. Recommendations: Health care workers to raise awareness about depression among elderly people and potential contributing and protective factors. Also, incorporation of depression screening into routine general health services and additional qualitative research on elderly depression to give contextual understanding of depression in the elderly in Tanzania.

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329. Musigula, S. P. (2025). Predictors of tuberculosis disease among people living with HIV attending care and treatment clinics in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The combination of Tuberculosis disease and HIV presents a major global health challenge, particularly in regions with high rates of both diseases. TB has been shown to worsen HIV progression to AIDS and is the leading cause of death among people living with HIV. People living with HIV are approximately 30 times more likely to develop Tuberculosis disease compared to those who are HIV-negative. **Objective:** To determine the predictors of Tuberculosis disease among PLHIV attending care and treatment clinics in Dar es Salaam. **Methodology:** This was a nested case-control study conducted among HIV-positive adults aged 18 and above who were enrolled in Care and Treatment Clinics (CTCs) in Dar es Salaam region from January 2021 to December 2022. Clients were retrospectively followed for two years, and TB cases and controls were selected at the end of the follow-up period. Data on demographic and clinical variables were extracted from the CTC-2 database, while socioeconomic variables were obtained using structured

questionnaires. The primary outcome was Tuberculosis disease among PLHIV. Multivariable logistic regression was used to identify independent predictors of TB disease. **Findings:** The study identifies several key predictors of Tuberculosis disease among people living with HIV. Order age particularly among those aged over 45 years was significantly associated with a higher odd of having TB, with individuals in this group being nearly three times the odds of having the disease compared to the younger age group 18-29 years. Advanced HIV disease indicated by WHO clinical Stage III or IV was also a strong predictor, with affected individuals having more than four times the likelihood of TB disease compared to those in earlier stages. Similarly, Timely Initiation of Tuberculosis Preventive Therapy was a strong and statistically significant predictor, with individuals-initiated Tuberculosis Preventive Therapy in time (< 2months) being 98.6% less likely to have TB disease. In addition, a history of contact with TB patient and tobacco use were both significantly associated with increased TB risk with each factor nearly tripling the odds of developing the disease. **Conclusions and recommendations:** This study highlights age, WHO clinical stage 3 or 4, delay of TPT initiation, exposure history of TB and smoking behavior as key predictors of TB disease in this population. The findings imply that TB prevention and management should go beyond clinical care to address both biomedical and social vulnerabilities. Specifically, targeted interventions are needed to focus on older individuals, those with advanced HIV disease, as well as early initiation of TPT to PLHIV. Socioeconomic vulnerabilities such as overcrowding and tobacco use also needs attention. These insights support a multisectoral approach that integrates clinical management with public health strategies and social support system in addressing the social determinants of health to reduce TB burden among PLHIV.

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330. Mussa, U.K.M. (2025). Prevalence and factors associated with female sexual dysfunction among women of reproductive age in Zanzibar. a community-based study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Female Sexual Dysfunction (FSD) is a globally prevalent but often overlooked public health issue due to stigma, cultural barriers, and limited awareness. It negatively impacts women's well-being, relationships, and mental health, yet remains under-researched in Zanzibar, Tanzania, limiting the development of effective health interventions and policies. **Aim:** The study aimed to determine the prevalence and identify the factors associated with FSD among Women of Reproductive Age (WRA) in Zanzibar. **Methods:** A community-based analytical cross-sectional study was conducted among 768 (WRA) in selected homesteads of Unguja, Zanzibar, from November 2023 to May 2025. Data were collected through face-to-face interviews using a modified Female Sexual Function Index (FSFI) questionnaire. The prevalence of FSD was determined using FSFI cut-off scores, and a 95% confidence interval was calculated. Factors associated with FSD were analyzed using chi-square tests and logistic regression, with statistical significance set at $p < 0.05$. **Result:** The prevalence of female sexual dysfunction (FSD) among women of reproductive age in Zanzibar was 48%, with the most affected domains being sexual desire (72%), orgasm (75%), and pain (over 60%). Among those affected, 59.7% reported mild symptoms, and 8.6% presented with a severe form of FSD symptoms. Multivariable analysis revealed that being single (AOR = 4.70, $p < 0.001$), having a history of childbirth (AOR = 3.15, p =

0.028), frequent menstruation (AOR = 3.01, p = 0.046), presence of chronic illness (AOR = 2.88, p = 0.002), and lack of full partner support (AOR = 0.61, p = 0.020) were significantly associated with FSD. **Conclusion:** Female sexual dysfunction is a prevalent and under-recognized issue among women of reproductive age in Zanzibar. Factors associated include marital status, childbirth history, menstrual irregularities, chronic illness, and partner support. These findings highlight the need for integrated sexual health services and targeted interventions to address the multifactorial nature of FSD in this population

331. Mvugalo, A.A. (2025). Clinicopathological Characteristics, Treatment Modalities, And Survival of Patients with Differentiated Thyroid Cancer at Ocean Road Cancer Institute From 2016 To 2021. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Differentiated thyroid cancer (DTC) represents the most common endocrine malignancy, with a rising global and national incidence. Despite its generally favorable prognosis, treatment outcomes in differentiated thyroid cancer depend on the availability of diagnostic and therapeutic resources such as radioactive iodine therapy (RAI), which remain limited in low-resource settings like Tanzania. **Objective:** This study aimed to assess the clinicopathological characteristics, treatment modalities, and three-year overall survival of DTC patients managed at Ocean Road Cancer Institute (ORCI) between January 2016 and December 2021, and to determine factors predicting survival. **Methods:** A retrospective cohort study was conducted involving 104 patients with histologically confirmed DTC. Independent variables were sociodemographic, clinic-pathological, and treatment data, which were extracted from hospital records. The primary survival endpoint was three-year overall survival (OS), defined as the time from diagnosis to death from any cause or last follow-up. Survival analyses were conducted using Kaplan-Meier methods. Univariate and multivariate Cox regression models were used to identify predictors of overall survival. **Results:** The study involved 104 participants. The mean age at diagnosis was 51.6 years, with a strong female predominance (89.4%). Papillary carcinoma was the most frequent histological subtype (62.5%). Most patients (98.1%) underwent surgery, with total thyroidectomy performed in 51%. Radioactive iodine (RAI) therapy was administered to 69.2% of patients, primarily in a single cycle. The three-year overall survival rate was 96.2%. On multivariate analysis, predictors of poorer survival included lower education level (secondary vs. university: HR = 3.3, p = 0.005), papillary histology (HR = 6.6, p = 0.018), and not receiving RAI therapy (HR = 9.5, p = 0.010). Conclusion: Despite favorable three-year survival, lower education level and not receiving adjuvant RAI were associated with worse outcomes. Optimizing RAI access and improving early detection, particularly in socioeconomically disadvantaged groups, may enhance survival.

332. Mwaisumo, F.F. (2025). Magnitude of Intrauterine Fetal Death: A Retrospective analysis of maternal clinical profiles and Management outcomes at Temeke Regional Referral hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Intrauterine fetal death (IUFD) remains a significant public health concern with profound clinical, emotional, social, and economic impacts. Understanding its magnitude and clinical profiles is crucial for improving maternal care and outcomes. **Aim of the study:** To determine the proportion of pre-Labor IUFD, describe maternal clinical profiles, describe maternal management, and describe obstetric adverse outcomes of women with IUFD at Temeke Regional Referral Hospital. Materials and **Methods:** A descriptive cross-sectional study was conducted using medical records from January 1st 2021, to December 31st, 2023. Registration numbers from MTUHA number 6 antenatal ward, MTUHA number 12 Labor ward, and registration book in obstetric theatre were used to retrieve files of women with IUFD occurring before Labor onset; those files with lack of complete data on maternal management were excluded. Data were extracted using a pre-tested tool from medical records notes, antenatal cards, and partographs. Based on hospital records at Temeke Regional Referral Hospital the annual number of pre-Labors IUFD is approximately 360 cases. Using the single proportional formular with a 95% confidence level, an estimated prevalence of 9% (based on Dar es salaam data) and 3% marginal of error a minimum sample size of 275 cases was required to estimate the magnitude of pre-labor IUFD. The total IUFD at Temeke Referral Regional Hospital in that period were 408.After sampling the pre labor IUFD obtained were 308 which were all included in the study. Analysis was done using SPSS version 25. Descriptive statistics were used to summarize the management and adverse outcomes. Continuous variables, such as maternal age and gestational age at IUFD, were analyzed using measures of central tendency (mean, median, inter quartile range) depending on their normality of distribution. Discrete variables were summarized using frequency and percentages. **Results:** Out of 13,350 deliveries, 308(2.3%) experienced pre-labor IUFD during the study period. Most affected women (76.3%) were aged 20–34 years. Anemia (31.2%) was the leading pregestational condition, while pre-eclampsia (44.2%) was the most common during the antenatal period. The full blood picture was the most frequently performed investigation (89.3%), and obstetric ultrasound confirmed 60.9% of diagnoses. Labor was induced in vi 69.9% of women with IUFD, while 13.4% underwent augmentation. Only 0.7% received documented post-delivery counselling. Complications occurred in 21.8% of study participants, mainly postpartum hemorrhage (68.7%), and maternal near-misses were 11.9%. **Conclusion:** In this study, 2.3 in every hundred women presented with pre-labor IUFD. And in every five women with pre-labor IUFD, one experienced a serious complication. Although Médecins Sans Frontières provided guidelines for resource-limited countries, and Tanzania is among them, no management guideline was used. High emphasis is needed to create guidelines that will guide the management of women with pre-labor IUFD.**Keywords:** Intrauterine fetal death, magnitude, adverse obstetric outcomes

333. Mwakabuli, A.E. (2025). Sports Nutritional Practices and Associated Factors among Premier League Soccer Players in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Optimal sports nutrition is essential for enhancing athletic performance, recovery, and overall health. Despite global guidelines, many elite athletes—especially in low- and middle-income countries—exhibit suboptimal nutritional practices. This study assessed sports nutrition

practices and associated factors among Premier League soccer players in Tanzania. **Methodology:** We conducted an analytical cross-sectional quantitative study involving 126 male football players from Tanzania Premier League teams in Dar es Salaam and Zanzibar. Data collection tools were developed using the Union of European Football Associations (UEFA) sports nutrition guidelines. We created a scoring system to evaluate nutrition knowledge and categorized both knowledge and practices. Univariate analyses (chi-square and logistic regression) and multivariate logistic regression were performed using STATA version 14 to identify predictors of good nutrition practice. **Results:** Only 26.2% (95% CI: 19.2%–34.6%) of players demonstrated good sports nutrition practices. The presence of a professional Guiding nutrition—especially dietitians, was significantly associated with better practices ($p = 0.004$). Players with inadequate knowledge had higher odds of poor nutritional practices ($p = 0.017$), while those with higher education demonstrated significantly better practices ($p = 0.004$). In multivariate analysis, education remained a significant predictor; players with college or university education were less likely to engage in poor nutritional practices (adjusted OR = 0.08, 95% CI: 0.01–0.61, $p = 0.015$). **Conclusion:** Sports nutrition practices among Tanzanian Premier League players are suboptimal. Access to professional nutrition guidance, adequate knowledge, and higher education were positively associated with better practices. These findings highlight an urgent need for structured nutrition support within professional sports in low-resource settings. Beyond performance enhancement, improving athletes' nutrition practices may also contribute to broader public health goals by promoting healthy eating behaviors, reducing the risk of non communicable diseases, and supporting community-based health promotion through athlete role modelling.

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334. Mwakasitu, J. R. (2025). Knowledge, Practice, and Factors Influencing the Implementation of Enhanced Recovery After Surgery (ERAS) Protocol Among Health Care Workers in Dar Es Salaam, Muhimbili University of Health and Allied Sciences.

Abstract

Background: Despite global endorsement, ERAS uptake in low-resource settings like Tanzania remains limited. The development of Tanzania's National Surgical, Obstetric, and Anesthesia Plan (NSOAP) provides an opportunity to integrate ERAS protocols into national health strategies. However, the readiness and capacity of healthcare workers (HCWs) to implement these protocols require assessment. **Methods:** A cross-sectional study was conducted from April to May 2025 in Dar es Salaam using multistage cluster sampling. Ten hospitals, two from each of the five municipalities (one public and one private), were selected. All doctors and nurses working in surgical departments at these hospitals participated. Data were collected through structured questionnaires assessing knowledge, practice, and perceived barriers to ERAS implementation. Data analysis included descriptive statistics and chi-square tests to determine associations between demographic and occupational variables and ERAS knowledge and practice levels. **Findings:** The study found that 49% of the respondents showed low knowledge of ERAS protocols, and 51% had moderate knowledge. Regarding practice, 66% reported a moderate level of ERAS protocol implementation. The number of surgeries participated in showed a statistically significant association with knowledge ($p = 0.023$) and practice levels ($p = 0.043$), indicating that clinical exposure positively influences ERAS familiarity and adherence. Barriers reported included lack of

ERAS training (99.3%), financial constraints related to preadmission nutritional support (99.3%), and insufficient access to minimally invasive tools and non-opioid analgesia. **Conclusion:** The study reveals critical gaps in knowledge and inconsistent practice of ERAS protocols among HCWs in Dar es Salaam. Despite moderate awareness, implementation remains partial and hindered by systemic, institutional, and educational barriers. **Recommendations:** To improve ERAS protocol implementation, it is recommended that the Ministry of Health and hospital leadership integrate ERAS training into continuous professional development programs and develop locally adapted, standardized guidelines.

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335. Mwakatuya, T.J. (2025). Diagnostic accuracy of computed tomography scan compared to histopathology in the diagnosis of benign and malignant focal hepatic lesions at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Introduction: Focal hepatic lesions (FHL) are common among patients undergoing abdominal cross-sectional imaging. CT scan is one of the widely used imaging modality implied in the diagnosis of FHLs. Broad objective: To determine the diagnostic accuracy of Computed Tomography scan in the diagnosis of benign and malignant focal hepatic lesions at Muhimbili National Hospital. **Methodology:** A hospital-based retrospective cross-sectional study was conducted at Muhimbili National Hospital. A convenient sampling method was used after a calculated sample size was obtained by Fisher's formula. All patients' records with abdominal CT images and liver histopathology results were recruited in the study. Analysis was done using IBM SPSS version 27 with descriptive statistics summarizing social demographics, while chi-square tests and Fisher's exact tests summarized the laboratory findings and diagnostic accuracy. **Results:** A total of 115 participants with FHLs underwent both abdominal CT scans and histopathology examinations. Out of those, 64 (55.7%) were male and 51 (44.3%) were female. The age group that had the highest number was 40–60 years, with 44 (38.3%) participants. The median and mean ages of participants were 53 and 52, respectively; the minimum and maximum ages were 1 and 81 years, making a range of 80 years. The most presented clinical feature was abdominal pain (61.7%), followed by abdominal swelling (51.7%). Of all patients, 103 (89.6%) had malignant FHLs, while the remaining 10.4% had benign lesions. Among the patients with malignant lesions, (50.7%) participants had raised serum CEA levels (>20 ng/ml), (p=0.028). It was also found that among participants with malignant FHLs, 25.6% (p=0.427) had raised serum AFP (≥400 ng/mL), 62.4% had moderate to severe anemia (Hb ≤ 10.9 g/dL) (p=0.053), and 74.4% had hypoalbuminemia (<35 g/L) (p=0.009). The most dominant malignant lesions were metastases, accounting for about 62 (53.9%) patients, followed by HCC, 37 (32.2%). The sensitivity, specificity, negative predictive value, positive predictive value, and accuracy of the CT scan were 100%, 50%, 94.5%, 100%, and 94.8%, respectively. **Conclusion:** It was concluded that abdominal CT scan is a non-invasive imaging modality that efficiently differentiates benign from malignant focal liver lesions. Additionally, the study clearly indicates that elevated CEA levels are predominantly linked to malignant focal hepatic lesions.

336. Mwakibolwa, E. S. (2025). The Economic Cost of Prostate Cancer Treatment: The Patient's Perspective. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The most prevalent disease in men and the fifth most common cause of cancer-related death globally is prostate cancer (PCA) (1). The high cost of PCA treatment may discourage patients from seeking treatment. In Tanzania, there has been limited research on the all-economic aspects of PCA treatment from the patient perspective. **Purpose:** This study assesses the economic burden of prostate cancer treatment among patients receiving treatment at the Ocean Road Cancer Institute (ORCI) and Muhimbili National Hospital (MNH) in Tanzania. **Methods:** The study involved 135 patients whereby; a structured questionnaire was used for data collection and SPSS were used for data analysis. Descriptive statistics were used to report average costs per month for prostate cancer patients. Using the exchange rate of 1 USD = 2591.7, the cost data were converted from Tanzanian shillings to 2024 USD (2). **Results:** The overall unit cost for prostate cancer treatment was $1119.8. The key cost drivers were surgery (31%) and hormonal therapy (15.4%). Nonmedical costs such as transportation, accommodations, and food, along with productivity losses, further exacerbate financial hardship, especially for patients from other regions. The coping mechanisms included receiving support from family and friends, borrowing money, selling assets, using savings and requesting an exemption from waiver payments. **Conclusion:** The financial burden of prostate cancer treatment is significant, especially for patients with no health insurance. The government should expand insurance coverage and integrate prostate cancer treatment into the upcoming Universal Health Insurance scheme.

337. Mwalukasa, F.I. (2025). Health-related quality of life quality of life among localized prostate cancer patients undergoing treatment in Muhimbili National Hospital and Ocean Road Cancer Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Prostate cancer (PC) is an increasing public health concern in Tanzania, with most patients presenting at advanced stages. Despite the introduction of newer treatment options such as hypofractionated radiotherapy, little is known about how different radiotherapy fractionation schedules affect health-related quality of life (HRQoL) among localized PC patients in resource-limited settings. Understanding HRQoL is essential for guiding patient centered care and improving treatment outcomes. **Objective:** To assess the impact of different radiotherapy fractionation schedules (conventional vs. hypofractionated) and associated factors on HRQoL in prostate cancer patients treated at Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI). Methods: A hospital-based cross-sectional study was conducted between January and April 2025. A total of 245 men with histologically confirmed localized PC were recruited using convenience sampling. Data were collected through interviewer-administered questionnaires, including the Swahili versions of SF-36 and EPIC-26 tools. Statistical analysis was performed using SPSS v25, employing descriptive statistics, independent t-tests, and multiple linear regression to evaluate HRQoL outcomes and determinants. **Results:** The median patient age was 69 years (IQR: 63–75), with 66.5% diagnosed at stage III disease. Most participants were married

(89.0%) and had primary or informal education (58.4%). Hypertension was the most common comorbidity (43.7%). Clinically, half of the patients (50.2%) had ECOG ≥2, and 64.5% had haemoglobin ≥11 g/dL. Compared to healthy populations, PC patients had significantly lower HRQoL across all SF-36 domains (e.g., physical functioning 54.7 vs. 95.8, role emotional 23.5 vs. 88.2, all $p < 0.001$). Patients treated with hypo fractionated radiotherapy reported better outcomes in physical functioning (67.1 vs. 53.1, $p = 0.048$), vitality (55.2 vs. 39.7, $p = 0.003$), and role physical (57.1 vs. 33.1, $p = 0.034$) compared to those receiving conventional fractionation. Multivariate regression showed that better Physical Component Summary (PCS) scores were independently associated with good performance status (ECOG. **Conclusion**: This study highlights the substantial HRQoL burden faced by Tanzanian men with localized prostate cancer. Hypo fractionated radiotherapy was associated with superior functional and psychosocial outcomes compared to conventional regimens, supporting its use in resource-limited settings. ADT also had a positive influence on HRQoL, largely through symptom relief and improved well-being. Key determinants of HRQoL included disease stage, ECOG status, treatment modality, and urinary/sexual function. These findings underscore the need for early detection, adoption of optimized radiotherapy schedules, and comprehensive supportive care strategies to enhance patient quality of life.

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338. Mwalukimba, S. J. (2025). Nurses/Midwives' Knowledge and Practices on Neonatal Pain Management in High Level Hospitals in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hospitalized neonates frequently undergo painful procedures, necessitating effective pain management to prevent immediate and long-term adverse effects. However, in many settings, including Tanzania, nurses/midwives' knowledge and practices in neonatal pain management are often suboptimal, contributing to unrelieved neonatal pain. Nurse/Midwives they spent a lot of time with neonates during their hospital stay, that is why this study done specifically to nurses/midwives. **Objectives:** This study aimed to assess the knowledge and practices of nurses/midwives on neonatal pain management in High-level hospitals in Dar es Salaam, Tanzania **Methods:** An analytical cross-sectional study was conducted in three regional referral and two national hospitals in Dar es Salaam. A total of 153 nurses and midwives were surveyed using a structured questionnaire. Data collected included demographic information, prior training, and standardized questions on neonatal pain management knowledge and practices. Descriptive statistics summarized participant characteristics, logistic regression identified factors associated with knowledge and practice levels and the p-value < 0.05 was considered statistically significant. **Results:** Participants were predominantly female (64.1%) and half held a diploma in nursing; 58.8% had received prior neonatal pain management training. Only 44.4% of providers demonstrated good neonatal pain management knowledge, whereas 56.2% exhibited good practice. In multivariate analysis, lack of prior training (aOR = 2.57, $p = 0.021$) and limited accessibility of pain management resources (aOR =26.18, $p < 0.001$) were significant predictors of poor practice. No significant associations were found between practice and age, sex, education, experience, or workload. **Conclusion:** Over half of nurses/midwives lacked adequate knowledge,

and a substantial proportion had suboptimal practice in neonatal pain management. The findings underscore the need for enhanced training and resource availability to improve neonatal pain management outcomes in a high levels' hospital setting

339. Mwamy, K.M. (2025). Evaluating The Acceptability of the 2024 NHIF Standard Package Among Patients Attending Healthcare at Mwananyamala Regional Referral Hospital in Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Health insurance is a cornerstone of equitable health systems, playing a critical role in improving access to care and reducing the financial burden associated with illness. In Tanzania, the National Health Insurance Fund (NHIF) introduced the 2024 Standard Package as part of broader health financing reforms aimed at expanding service coverage, enhancing affordability, and accelerating progress toward Universal Health Coverage (UHC). Despite these intentions, concerns remain regarding the adequacy, fairness, and overall acceptability of the package among beneficiaries. Questions persist about how well the benefits meet patients' diverse health needs and expectations, particularly in urban settings. Understanding beneficiaries' acceptability with the 2024 NHIF Standard Package is therefore essential to evaluate its effectiveness, guide evidence-based policy refinement, and strengthen the equity and responsiveness of Tanzania's journey toward UHC. **Objective:** This research aimed to evaluating the acceptability of the 2024 NHIF Standard Package among Beneficiaries attending at Mwananyamala Regional Referral hospital in Dar es Salaam. By examining four key dimensions satisfaction, affordability, adequacy, and coherence of services and exploring their overall influence on healthcare access and user experience. Materials and **Methods:** This formative evaluation employed a descriptive cross-sectional mixed-methods study evaluated the acceptability of the 2024 NHIF Standard Package among Patients at Mwananyamala Regional Referral Hospital in Dar es Salaam. Quantitative data were collected using structured questionnaires administered to a systematically sampled group of 294 Patients, while qualitative insights were gathered through 12 in-depth interviews with purposively selected participants until thematic saturation was reached. Data collection tools were rigorously tested for validity and reliability, and the qualitative component addressed trustworthiness through credibility, transferability, dependability, and conformability. Quantitative data were analysed using Stata version 16 through descriptive statistics and Chi square tests, while thematic analysis NVivo was used for qualitative data. Triangulation was employed to integrate findings from both components to draw comprehensive conclusions on the overall acceptability of the package. This comprehensive approach enabled a detailed understanding of Patients' perceptions, satisfaction, and challenges related to the 2024 NHIF standard package. **Results:** The study found that the 2024 NHIF Standard Package was moderately acceptable among beneficiaries. Overall, 68% of respondents expressed satisfaction with the services received, particularly for consultations, medications, and laboratory tests, reflecting improved access and affordability. However, 39% of beneficiaries reported making out-of-pocket (OOP) payments, mainly for drugs and diagnostic services not covered by NHIF, indicating gaps in financial protection. Furthermore, only 58% felt that their essential healthcare needs were fully met, suggesting that the benefit package remains limited in addressing chronic and specialized care.

Service coherence was undermined by inconsistent communication, delayed referrals, and variation in benefit interpretation across facilities, leading to frustration among users. Despite these challenges, most respondents acknowledged that the 2024 reform had improved their ability to seek care promptly and reduced financial strain. Overall, the acceptability of the package was shaped by four key interrelated elements satisfaction, affordability, adequacy, and coherence which collectively influenced beneficiaries' continuity and trust in the NHIF system toward Universal health coverage. Conclusion; The Acceptability of the 2024 NHIF Standard Package at Mwananyamala Regional Referral Hospital is moderate, shaped by satisfaction, affordability, adequacy, and coherence of services. While the package has improved healthcare access and reduced financial strain, persistent gaps such as drug shortages, out-of-pocket payments, and unclear benefit communication limit its full effectiveness. Beneficiaries view NHIF as essential but expect more reliability, fairness, and comprehensive coverage. To enhance acceptability, NHIF should expand benefit scope, strengthen supply chain systems, and improve communication and coordination across accredited facilities. Implementing these reforms will increase user trust, equity, and satisfaction, reinforcing NHIF's contribution to achieving Universal Health Coverage (UHC) in Tanzania. ***Keywords:*** *NHIF, Beneficiaries, Acceptability, Affordability, Adequacy, Coherence, Health Insurance, Tanzania, Universal Health Coverage,*

340. Mwang'ande, E. (2025). Patterns of canine impaction, treatment need and its associated sagittal malocclusion among patients seeking orthodontic treatment at the MUHAS dental clinic, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: An impacted canine tooth is the failure of a canine to erupt to the occlusal level due to a clinical or radiographic barrier, after the normal eruption age. Following third molars, canines are the most commonly impacted teeth. In Tanzania, no prior studies have assessed the patterns of canine impaction. **Objective:** To assess the patterns of canine impaction, treatment need and its associated sagittal malocclusion among patients attending for orthodontic treatment at the MUHAS dental clinic. **Methodology:** A hospital-based analytical cross-sectional study was conducted at the MUHAS Dental Clinic. Participants were selected using Convenience sampling. Data were collected through clinical and radiographic examinations, including Orthopantomography (OPG) and CBCT. Canine impaction patterns were assessed using Archer's classification, while sagittal malocclusion was evaluated using Angle's classification. Data were analyzed using SPSS version 27.0. Chi-square tests and multiple logistic regression were used to determine associations, with significance set at $p < 0.05$. **Results:** A total of 419 participants 223 (53.2%) female, with response rate 98%, mostly aged 12–18 years, were included. The prevalence of canine impaction was 10.3%, more common in the maxilla (9.3%) than the mandible (3.6%) and affecting more females (63%) than males (37%). Most cases were unilateral canine impactions and involved the maxilla. Buccal impactions accounted for 80.5% with vertical angulation observed in (75.6%) of cases. Class I malocclusion was most common (77%). No significant association was found between canine impaction and sagittal malocclusion ($p = 0.515$). Sex was significantly associated with sagittal malocclusion. (COR = 0.631, 95% CI: 0.400–0.995, $p = 0.048$) and (AOR = 1.612, 95% CI: 1.014–2.563, $p = 0.044$) respectively. The most common (80.5%) treatment

needed was surgical exposure requiring orthodontic repositioning. **Conclusion:** The overall prevalence of canine impaction was high 10.3%, predominantly in females and the maxilla, with buccal and unilateral presentations being most common. There was no significant relationship between sagittal malocclusion and impaction. Most cases required surgical and orthodontic intervention.

341. Mwanga, E.I. (2025). Anatomical sites, stages and factors for delay to treatment among patients with head and neck squamous cell carcinoma attending Muhimbili National Hospital and Ocean Road Cancer Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Head and neck squamous cell carcinoma (HNSCC) is a serious health concern in the world, ranked the 7th most common cancer worldwide. In Tanzania, it contributes to 94% of all head and neck cancers. Delay to definitive treatment initiation has poor prognosis. **Aim of the study:** This study intended to assess the anatomical sites, stages and factors for delay to treatment among patients with HNSCC attending Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI). **Methodology:** This was a hospital based prospective cross-sectional study conducted at MNH and ORCI located in Dar es Salaam, Tanzania between 1st August 2024 and 30th January 2025 involving a minimum of 85 patients histologically diagnosed with HNSCC. Data was obtained through a data collection form and from patient's medical records. Univariate and multivariate descriptive statistics was used to analyses the factors associated with delay to initiate definitive treatment of HNSCC, variables with $P < 0.05$ were considered statistically significant. **Results:** A total of 85 patients with HNSCC were included in this study, majority were males 54 (64.3%) with a male to female ratio of 1.7:1, the median age of patients was 54 years (IQR: 43.5-62). The larynx was the common anatomical site 21(24.7%) followed by the hypopharynx 16 (18.8%). Majority of patients (73%) were diagnosed at late stages (III & IV) with oropharyngeal SCC and sinonasal cancer having the highest stage IV presentation by 100% and 75% respectively. Delay to definitive treatment initiation was observed in 42.4% of patients. The presence of comorbidity was significantly associated with delay to treatment initiation ($p = 0.020$). The presence of comorbidities like HIV/AIDs hypertension, diabetes mellitus increased the likelihood of delayed to treatment (adjusted OR = 3.812, 95% CI: 1.221–11.904). **Conclusion:** The larynx was the most prevalent anatomical site of HNSCC and most patients presented at late stages of the disease. Delay to initiation of definitive treatment was common and significantly associated with presence of comorbidity.

342. Mwanganikani, E. (2025). Factors for and early post operative complications associated with delays in definitive surgery among patients with pelvic and acetabular fractures treated at the Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Delays in definitive surgery among patients with pelvic and acetabular fractures (PAF) is associated with serious complications, poor clinical outcome as well as mortality and morbidity. Inspite of the benefits associated with early definitive surgery, Delayed surgery in Pelvic and acetabular fracture (PAF) still pauses a challenge at MOI. In addition, factors that contribute to such delays and the associated complications have been understudied and undocumented. **Objective:** To identify factors associated with delayed definitive surgery and early post operative complications among patients with PAF treated at the Muhimbili Orthopaedic Institute (MOI). **Methodology:** A hospital based cross sectional study was conducted at the Muhimbili orthopedic institute (MOI) in Dar es Salaam, Tanzania from July 2024 to December 2024. This study enrolled a total of 76 admitted trauma patients diagnosed with PAF, who met the inclusion criteria. A structured and pretested questionnaire was used for data collection. The Statistical Package for the Social Sciences (SPSS) was used for data analysis. Mean and standard deviations have been used to summarize all the continuous variables. The Modified Poisson univariable and Multivariable logistic regression analysis has been done to confirm the dependency among variables and further understand their relationship. A P – value of 0.05 was set to be the level of significance. **Results:** A total of 76 patients were included in the study in which, 86% (65/76) were treated in delay. Of the 65-patient treated definitively in delay 77.4% (43/65) were male, with more than three quarters of participants aged between 18-49 years of age, with a median age of 35. The mode of payment, comorbid conditions and need for blood transfusion before Operation were found to be independent predictors of delayed definitive surgery among PAF patients.

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343. Mwangolombe, A.A. (2025). Early knee functional outcomes in adult patients with closed complete intra-articular distal femur fracture fixed with condylar buttress plates at Muhimbili Orthopedic Institute from July 2024 to December 2024. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Distal femur fractures are complex injuries that pose clinical challenges for orthopaedic surgeons worldwide. The fractures involve the region from the distal metaphyseal diaphyseal junction to the femoral condyles' articular surface. Recently it has been observed that there has been an increase in the number of patients with distal femur fracture (AO type 33C), especially in young adults. This study evaluates the factors associated with early knee functional outcomes based on modified Schatzcker and Lambert knee functional scale following fixation of femoral fractures 33C with a condylar buttress plate. **Objective:** To determine factors influacing the early functional results in patients with closed distal femur fracture 33C who undergo treatment with condylar buttress plate at Muhimbili orthopedic Institute for a period of 6 months. **Methods:** Descriptive longitudinal cohort study was conducted from July 2024 to December 2024 at MOI. 26 adult patients with AO/OTA 33C fractures treated with condylar buttress plates were included.. A questionnaire was used to gather data from the participants in the study.. Data were analyzed by using SPSS version 24 and ordinal regression analysis was carried out to determine Early knee functional outcome of the study participants and factors influencing it. **Results:** Average age was

42.96 ± 17.04 years and 53.8 % of participants were female. follow up time was three months. Modified Schatzker and Lambert scoring/classification, showed that nearly half of the participants achieved excellent to good outcomes 14(53.8%), Male younger than 35years had significant better early knee functional outcome. **Conclusion and recommendation:** CBP has good to excellent early knee functional outcomes scores in patient who are young adult, male and whom were immobilized temporally with skin traction. This signify proper selection of patients for a particular implant is necessary for a better outcome, together with further long-term follow-up studies.

344. Mwangomale, M.D, (2025). Socio-cultural and financial factors influencing access to water, sanitation, and hygiene among pastoral communities in Ngorongoro District. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Access to water, sanitation, and hygiene (WASH) services is a fundamental human right and a key determinant of public health and socio-economic development. Lack of WASH services is linked to various communicable diseases, including diarrheal, parasitic, and vector-borne infections. Globally, about 2.2 billion people lack safely managed water services, with 115 million depending on surface water. Additionally, 3.5 billion people lack safely managed sanitation, including 419 million practicing open defecation, while 2 billion lack basic hygiene services, with 635 million having no hygiene facility at all. In Tanzania, access to WASH services is influenced by social, cultural, and economic factors, resulting in disparities in availability, affordability, and utilization, especially among pastoral communities' Broad **objective:** To explore socio-cultural and economic factors influencing access to water, sanitation and hygiene services among pastoralist community in Ngorongoro district. **Methodology:** A study employed qualitative approach. Participants were selected using purposive sampling, a non-probability method designed to create a logically representative sample. The informant semi structured interview and focus group discussion guides was used to collect data. Qualitative data analysis was used for both interviews and FGD data. **Results:** Findings revealed that men are the primary decision-makers regarding WASH services, including the use of latrines and allocation of financial resources for WASH materials. Cultural beliefs and taboos, such as men's reluctance to use or build latrines shared with women, contribute to persistent open defecation. Furthermore, low household income and poor financial prioritization limit access to clean water and adequate sanitation facilities. **Conclusion:** The study concludes that, within the Maasai community, men hold the primary decision-making authority over WASH services including whether available latrines are used and determine if financial resources will be allocated for the purchase of essential WASH materials.

345. Mwangosi, R.A. (2025). Factors Influencing the Implementation Of The Nutrition Compact Agreement Among Members Of The Multisectoral Steering Committee On Nutrition In Songwe Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Nutrition governance has been proven to be a relevant approach to improving nutrition services in most of the third world countries. Tanzania has adopted nutrition governance since 2011, and different innovation has brought in to strengthen Nutrition governance for improving Nutrition outcome. National Multisectoral Nutrition Action Plan (NMNAP), Multisectoral Nutrition Information System (MNIS) and Nutrition Compact agreement are some of these innovations. **Aim of the study:** This study Aim to explore the factor influencing the implementation of the Nutrition Compact at sub national levels in Songwe region. This knowledge will enable quality improvement and successful scaling up the intervention in similar settings. **Method:** This study followed an explorative qualitative design that aimed at exploring the perceptions and experiences of key informants at the regional and district levels. A purposeful sampling was employed to select interviewees based on their involvement in the management and implementation of the Nutrition Compact Agreement in Songwe region. Data were collected through in-depth interviews, focusing on understanding the perspectives of the respondents and desk review was done on some key documents. **Result:** This study explored the factors influencing the implementation of the Nutrition Compact Agreement among members of the Multisectoral Steering Committee on Nutrition in the Songwe Region of Tanzania. The findings highlighted that strong government commitment, effective multisectoral collaboration, and active engagement of non-governmental organizations significantly supported implementation efforts. Key enabling resources included signed agreements, supportive policy frameworks, and dedicated budget allocations. However, several challenges hindered progress, including inadequate financial resources, a shortage of skilled personnel, outdated policy instruments, and limited availability of tools and supervision. Although the compact was widely viewed as clear and well-structured, ongoing capacitybuilding was identified as critical, particularly in addressing the issue of staff turnover. Overall, xiv the study emphasizes the importance of accountability, resource mobilization, and coordinated stakeholder efforts in achieving sustainable improvements in nutrition outcomes. **Conclusion:** This study findings illustrates the complex but achievable nature of multisectoral nutrition interventions, provided there is strong leadership, collaboration, and resource allocation. Scaling up the best practice and addressing the highlighted challenges will have great impact on achievement of the Nutrition compact Agreement implementation in Songwe region.

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346. Mwansyange, O. (2025). Evaluation of enablers and barriers to early warning scores system implementation among post operative patients at regional hospitals in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Early warning score systems, such as the National Early Warning Score (NEWS), are critical tools for the timely detection of clinical deterioration and improving patient outcomes. Despite their documented benefits, implementation of EWS remains limited in many low-resource settings. In regional hospitals in Dar es Salaam, Tanzania, EWS systems have not yet been formally introduced, leading to concerns about the consistency and completeness of vital documentation, a foundational component for effective EWS application. The practice of EWS

varies significantly in Africa. In most of the low-resource settings, there was a lack of completeness of the vital sign sets, and sometimes they were not taken due to different reasons. In Tanzania, we lack robust data on the prevalence and types of missed vital sign changes in postoperative patients. There is no published study on the status of the implementation of the EWS systems among post-operative patients, and the possible barriers to the implementation of EWS systems among post-operative patients. **Aim:** This study aimed to determine the barriers to implementation of the National Early Warning Score system among the post-operative patients in regional referral hospitals in Dar es Salaam, Tanzania. **Materials and Methods:** This was a cross-sectional hospital-based study from March 2025 to April 2025 in three regional hospitals in Dar es Salaam. The study involved 234 post-operative patients in surgical wards. A standardised checklist was used in data collections, including the completeness of documentation of temperature, pulse rate, respiratory rate, blood pressure, oxygen saturation, and level of consciousness as per NEWS criteria among postoperative patients in the past 24 hours. Statistical Package for Social Sciences (SPSS) version 27 was analysed. A relationship between the status of using the NEWS system and the independent variables was established using bivariate analysis. Then, chi-square or Fisher's exact tests were used to examine potential associations between variables. Association with a p-value of < 0.05 was considered statistically significant. Multivariate analysis using logistic regression was conducted for all significant factors in bivariate analysis. **Results:** This study revealed that vital signs documentation essential for NEWS implementation in Dar es Salaam's regional hospitals achieved an overall adherence rate of 70.9%. Key patient related enablers for higher adherence included older age ($p = 0.003$), pre-existing conditions ($p = 0.001$), emergency procedures ($p = 0.018$), and the use of general anaesthesia ($p = 0.008$). Conversely, regional anaesthesia usage ($p = 0.000$) was identified as a barrier to adherence. Provider factors that significantly improved adherence were a higher number of nurses per shift ($p = 0.01$), vital signs training and education required (NEWS) ($p = 0.013$), experienced healthcare providers ($p = 0.000$ for 7+ years), and frequent NEWS parameters assessments ($p = 0.001$).. Barriers included limited nursing staff ($p < 0.001$), lack of training ($p < 0.001$), less experienced providers ($p < 0.001$), and infrequent assessments ($p < 0.001$). Institutionally, the immediate availability of vital signs monitors ($p < 0.001$) and strict adherence to guidelines and Standard Operating Procedures (SOPs) ($p < 0.001$) were crucial enablers, while delayed equipment availability ($p < 0.001$) and failure to follow SOPs ($p < 0.001$) completely hindered implementation, undersco ring the multifaceted nature of factors influencing effective NEWS adoption for improved post operative patient safety. **Conclusion and recommendations:** Vital signs taking, essential for NEWS implementation in Dar es Salaam's regional hospitals, shows moderate adherence and is significantly impacted by patient acuity, provider expertise, staffing, and institutional infrastructure. To improve post operative patient safety, we recommend prioritising comprehensive staff training and improved documentation practices, to enhance vital sign recording as a prerequisite for NEWS adoption. Furthermore, ensuring adequate nursing staff per shift, guaranteeing immediate availability of critical signs monitors, and strictly enforcing standardised NEWS guidelines and SOPs are crucial for enhancing adherence and optimising patient outcomes in surgical settings.

347. Mwanuke, A.P. (2025). Adherence To Infection Prevention and Control Guidelines, Its Facilitators And Barriers Among Healthcare Workers In Intensive Care Unit At Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background- studies indicate that infection prevention and control (IPC) guidelines are essential for protecting health care workers and patients from health care associated infection (HCAIs), especially in high-risk settings like intensive care unit. Consistence adherence to IPC guidelines remains challenge, particularly in resource -limited settings like Tanzania. Materials and methods- This study assessed the level of adherence to IPC guidelines, its facilitators and barriers among HCWs at intensive care unit(ICUs) of Muhimbili national hospital Tanzania, quantitative, descriptive cross -sectional study was conducted using stratified systematic sampling of 174 (health care workers) HCWs including doctors, nurses, pharmacists, health attendants and physiotherapist .data were collected via self-administered structured questionnaire and analyzed using SPSS-25 including bivariate and multivariate logistic regression, P-value of <0.05 was used to determine statistical significance association. **Results:** The study involved 174 HCWs with 100% response rate, 54% being female and were aged 25-35 years 58%. Of the participants 44.8% held a bachelor degree, 55.2% participants were nurses. About 69% had received IPC related on job training within three years and 86.2% had seen IPC guidelines in their units. The overall adherence to IPC guidelines was 67% below the national standards with hand hygiene showing the highest adherence 78.8% and isolation practice the lowest 61.5%. Training and education were reported by 77.6% of respondents as the main facilitators of adherence to IPC. Professional role of HCWs was significantly associated with IPC adherence. Doctors were nearly five times more likely to adhere to IPC guidelines compared to physiotherapist (AOR=4.759, 95%CI:1.078-20.999, p=0.039). Barriers for adherence to IPC reported most by participants were lack of PPE 59.2%. **Conclusion and recommendation:** I recommend IPC training and workshops, also messages to role -specific needs and ensure wide accessibility and visibility of IPC guidelines and ensure availability of resources like PPE. Future research should include qualitative studies to explore professional specific barriers to IPC adherence.

348. Mwasekaga, F.A. (2025). Work-related psychosocial hazards and depression among bar attendants in Ubungo Municipal Council, Dar es Salaam. Muhimbili University of Health and Allied Science.

Abstract

Introduction: Bar attendants are a crucial part of the hospitality industry, but they still encounter great work-related psychosocial hazards that adversely affect their health and well-being). Worldwide, studies had indicated that work-related psychosocial hazards are associated with depression, that can influence physical health disorders. Bar related work such as bar attendants is informal employment system with less protections against work-related psychosocial hazards. **Objective:** To assess work-related psychosocial hazards and depression among bar attendants in Ubungo Municipal Council, Dar es Salaam, Tanzania. **Methodology:** A cross-sectional study was

conducted among 384 bar attendants in Ubungo municipal between May and June 2025. A multistage stage cluster sampling was used to select participants for the study. The outcome variable was depression, which was assessed using the Patient Health Questionnaire-9 (PHQ-9). The exposure variable was work-related psychosocial hazards which was measured using the Copenhagen Psychosocial Questionnaire III (COPSOQ III). Ordinal logistic regression analysis was carried out to estimate crude and adjusted odds ratios. All analyses were conducted using STATA version 17. **Results: The mean (±standard deviation) age of participants was 27.6 years (±5.6).** Quarter of participants (25.3%) were exposed to high work-related psychosocial hazards. More than three quarters (76%) of participants had depression with 20.1% mild depression, 26.0% moderate depression, and 29.9% severe depression. Exposure to high work-related psychosocial was strongly associated with increased level of depression (adjusted odds ratio (aOR) = 6.27; 95% CI: 3.87–10.16; $p < 0.001$). **Conclusion:** Depression is highly prevalent among bar attendants in Ubungo Municipal. The strong association between exposure to high work-related psychosocial hazards highlights the urgent need for targeted interventions to improve psychosocial work environments and support mental health among bar attendants.

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349. Mwasulama, E. (2025). Catastrophic health expenditure among members and non-members of the improved community health fund (ICHF) in Mbeya Region. Muhimbili university of health and Allied Sciences.

Abstract

Background: In Tanzania, out-of-pocket payments (OOPs) for healthcare services have become a significant concern, leading to poor households experiencing catastrophic health expenditure (CHE), particularly in the context of rising economic pressures and limited access to comprehensive health insurance coverage. Efforts have been made by the government, yet many still face financial hardship concerning healthcare accessibility and service utilization. Aim: To assess the extent to which members and non-members of the improved Community Health Fund (iCHF) incur catastrophic health expenditures when seeking healthcare in the Mbeya region across two selected councils. **Materials use and methods:** This study adopted a cross-sectional design to facilitate a comparative analysis between members and non-members of the iCHF, with data collected at a single point in time. The research targeted individuals aged 18 years and above attending healthcare in selected health facilities within Mbeya City Council and Kyela district council. Structured questionnaires featuring closed-ended questions were employed to gather quantitative data on demographic characteristics, health expenditures, and insurance status. The collected data were analyzed using descriptive statistics techniques, with the statistical package for the social sciences (SPSS) software utilized to facilitate data analysis, enabling the identification of patterns and associations related to health financing and expenditure among the study population. **Results:** 69.1% of respondents incurred OOP healthcare payments in the past month, with an average expenditure of TZS 28,792.17 and a median of TZS 10,000. The prevalence of CHE defined as OOP payments ≥10% of household income was 56.7%. Although iCHF members had a slightly lower prevalence of CHE (50.9%) compared to non-members (59.3%), the difference was not statistically significant (p = 0.294). Multivariable analysis showed that inpatient (OR=5.19, p=0.006) and emergency services (OR=4.00, p=0.010) significantly increased the odds of OOP.

Male gender was nearly significant (OR=0.55, p=0.061), suggesting men may be less likely to experience high costs. Non-members were more likely to borrow money (37.2%) compared to members (14.5%, p=0.001). While iCHF membership did not eliminate high OOP, it was associated with less reliance on borrowing and asset sales. These results underscore the need to strengthen health insurance for better financial protection. **Conclusions:** This study highlights that OOP healthcare payments remain a significant financial burden for households in the Mbeya region, with over half of respondents experiencing CHE. Although membership in the iCHF was associated with reduced reliance on borrowing and asset sales, it did not significantly lower the overall incidence of CHE compared to non-members. The findings suggest that while health insurance schemes like the iCHF can provide some financial protection, they are insufficient on their own to fully prevent CHE. Income level emerged as a critical factor influencing CHE risk, underscoring the need for targeted policies to enhance financial risk protection, improve insurance coverage, and address economic disparities. Strengthening healthcare financing strategies remains essential to achieve more equitable and sustainable access to healthcare services in the region.

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350. Mwenda, R. J. (2025). Role of isotopic dynamic renal scintigraphy in patients with renal conditions at tertiary hospitals in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Renal scintigraphy is a crucial nuclear medicine tool for assessing kidney function and urinary tract dynamics. It is indicated in pyelonephritis, renal scarring, urinary tract obstructions, differentiating obstructive from non-obstructive hydronephrosis, renovascular hypertension, or renal artery stenosis, potential kidney donors for assessing how much each kidney contributes to global renal function, and congenital kidney anomalies. No study has evaluated the role of dynamic renal scintigraphy among patients with renal conditions in Tanzania. **Objective:** The main aim was to determine the role of isotopic dynamic renal scintigraphy (DRS) in the management of patients with renal conditions between January 2022 and March 2025 at MNH and ORCI. **Methodology:** This study enrolled 110 patients of all ages undergoing dynamic renal scintigraphy. The study collected data on sociodemographic factors, clinical indications, scintigraphy findings, and post-procedure management after obtaining necessary approval. Renograms' interpretation was done. Statistical analysis was performed using SPSS version 24, with significance determined at a p-value of less than 0.05. **Results:** The mean age was 37.4 years (SD ±21.9), with females comprising 59.1% of participants. Most patients were from urban areas (73.6%), and the predominant indication was suspected obstructive uropathy (70%), frequently affecting the left kidney (47.3%). Among 111 renal units, 61.3% underwent surgical management. Abnormal perfusion (AOR = 7.35, p = 0.010) and delayed clearance (AOR = 9.51, p = 0.003) independently predicted surgical intervention **Conclusion:** DRS is utilized in diagnostic clinical workup of obstructive uropathy and renal donor evaluation, and significantly influences management decisions at tertiary facilities in Tanzania. However, the clinical factors also play a role in decision-making towards management.

351. Mwende, V.E. (2025). Prevalence of depressive symptoms and associated factors among caregivers of pediatric cancer patients at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Caregivers of pediatric cancer patients face significant depression due to emotional, physical, and financial stress. Prolonged hospital stays, uncertain prognosis, and economic strain increase their burden. Many lack adequate support, leading to exhaustion and unaddressed mental health needs, which can negatively affect both caregivers and the child's well-being. **Objective:** This study aimed to determine the Prevalence of depressive symptoms and associated factors among caregivers of pediatric cancer patients at Muhimbili National Hospital. **Methodology:** A cross-sectional, analytical study was conducted among caregivers of pediatric cancer patients at Muhimbili National Hospital. Inpatients were recruited consecutively and outpatients randomly. Data were collected using the PHQ-9 and a semi-structured questionnaire. Analysis in SPSS v23 included descriptive statistics, Chi-square tests, and multivariate logistic regression ($p < 0.05$). Ethical clearance was obtained, and participants gave oral consent. **Results:** The study included 325 caregivers of pediatric cancer patients (mean age 39 ± 8.13 years). Most were aged 25–50 years (89%), female (84%), married (73%), and parents of the child (82%). Nearly half (45%) had primary education, 39% secondary; 42% were selfemployed. Most caregivers had provided care for 25 years, female sex, caregiving ≥6 months, and ≥12 hours/day caregiving. **Conclusion:** This study found that caregivers of pediatric cancer patients experience depressive symptoms. Factors associated with depression included age ≥ 25 years, female gender, caregiving ≥6 months, and ≥12 hours per day. Findings highlight the need for integrated psychological support, regular mental health assessments, and culturally sensitive counselling, particularly for long-term female caregivers ≥ 25years. Future research should use larger, longitudinal, and mixed-method designs to better understand caregiver mental health and inform interventions.

352. Myula, F.E. (2025). The clinical profile, outcomes, and predictors of 24 -hours adverse events in non-traumatic adult patients with cardiac arrhythmias presenting to the emergency medicine department of Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cardiac arrhythmias, marked by abnormal heart rates and rhythms, present significant risks of morbidity and mortality, particularly in emergency settings. Understanding the clinical profiles, outcomes, and predictors of adverse events in these patients are crucial for improving management and reducing complications, especially in sub-Saharan Africa where data is limited. **Aim:** To determine the clinical profiles, outcomes, and predictors of 24-hours adverse events in adult patients presenting with cardiac arrhythmias at the Emergency Medicine Department of Muhimbili National Hospital (MNH). **Methods:** A prospective cohort study was conducted from April 2024 to June 2024, involving adult patients with confirmed cardiac arrhythmias. Data were collected using a structured case report form covering demographics, clinical presentation, type of arrythmia, disposition, and 24-hours outcomes for all patients with

cardiac arrhythmia to check for development of adverse event which was defined as the occurrence of death, cardiac arrest, stroke, or heart failure. Follow-up calls were done at the 24-hour to determine the occurrence of adverse events. Analysis was performed using IBM SPSS version 26. Descriptive analysis was summarized as frequencies, univariate followed with multivariate logistic regression to identify predictors of 24-hours adverse events. Statistical significance was set at a p-value of less than 0.05 **Results:** Among the 332 patients enrolled, the mean age was 52 years, with males constituting 184 (55.4%). The most common presenting complaints were shortness of breath (44.9%) and awareness of heartbeat (24.4%). Sinus tachycardia (53.9%) and atrial fibrillation (16.6%) were the predominant arrhythmias. Hypertension (36.7%) and diabetes mellitus (16.9%) were prevalent comorbidities. The adverse events that occurred within 24 hours included deaths (3%), cardiac arrests (1.2%), and cerebrovascular accidents (0.6%). The proportion of 24-hour adverse events was 4.8% (95%CI 2.4%-7.1%), with ventricular tachycardia (aOR) of 49.83 (95% CI: 5.41 - 459; p = 0.001), chief complaint of awareness of heartbeat (aOR) of 22.14 (95% CI: 3.23 - 151.8; p = 0.002), and age over 60 years identified as significant predictor aOR of 42.62 (95% CI: 2.10 - 863; p = 0.015). Conclusion: Age over 60 years, ventricular tachycardia, and chief complaint of awareness of heartbeat were significant predictors of adverse events in patients presenting to the emergency department with cardiac arrhythmias. These findings highlight the importance of prompt identification and close monitoring of high-risk patients, particularly those with these predictors, to reduce adverse events and improve patient outcomes in emergency settings.

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353. Mzokolo, I.C. (2025). Acute effects of physical exercise on lung function and airway inflammation parameters among footballers and basketballers in Dar es salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer is one of the major causes of morbidity and mortality among women in the world. It is the fourth most common cancer among women globally. Tanzania is among the top ten countries in the world with the highest burden of cervical cancer. It is the most common cancer in Tanzania (24.2%) and the leading cause of mortality among cancers (23.0%). The age-standardized incidence rate is 62.5 cases per 100,000 women, and the age-standardized mortality rate is 42.7 per 100,000 women. Cervical cancer treatment has a great impact on the national health system and, more importantly, causes a high economic burden to households. However, there is limited costing data in Tanzania looking at the cost of treatment for cervical cancer based on the current modality of treatment in which is based on three stages, which are early, local advanced, and distant metastatic stage. **Broad objective:** To determine the unit cost of treatment for cervical cancer in Tanzania from a provider's perspective. **Materials and Methods:** The research design that was used is a descriptive cross-sectional design. A provider's perspective was used for the analysis of the cost of treatment of cervical cancer. This study encompassed identified pathways for confirmed cervical cancer patients with early-stage cervical cancer in whom radical hysterectomy was done at Muhimbili National Hospital (MNH), locally advanced cervical cancer patients, and distant metastatic cervical cancer patients who received chemoradiotherapy and combination chemotherapy treatment, respectively, at Ocean Road Cancer Institute (ORCI). The

study used a bottom-up, micro-costing approach. Costs were categorized into capital and recurrent costs. Data analysis was done using Microsoft Excel 2016.**Results**: The unit cost of treatment of early-stage cervical cancer, which is managed by surgical intervention, is 490 USD per patient. The unit cost of surgery (radical hysterectomy) is 259 USD. The unit cost of treatment for locally advanced cervical cancer for the first year after diagnosis is 3,909 USD per patient. Moreover, the unit cost of providing radiotherapy –EBRT and Brachytherapy is 2,756 USD and 402 USD per patient for the duration of treatment. The unit cost of treatment for distant metastatic cervical cancer for the first year after diagnosis is 2,877 USD per patient. **Conclusion:** Treatment of cervical cancer, which is the leading cancer in morbidity and mortality in Tanzania, is expensive which requiring many resources in its treatment, as we have seen from this study, in which the unit cost obtained ranges from twice to twenty times the minimum government wage for public servants. Also, the unit cost of treating early stages is lower than advanced stages, which shows the importance of screening and early treatment.

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354. Naali, A.A. (2025). Parents' awareness and perception on Human Papilloma Virus (HPV) vaccination dose shift to single dosage in Temeke district, Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Despite WHO and Tanzania's Ministry of Health endorsing a shift from a two-dose to a single-dose HPV vaccination for girls aged 9–14 years, parents' awareness of single dose vaccination in the communities remains low. Studies have consistently shown that parental refusal and lack of awareness are major factors affecting implementation of HPV vaccination in Tanzania. Concerns about the vaccine's safety and effectiveness persist and continue to influence vaccination. This study explores these concerns in the context of the new single-dose policy. **Objective:** To explore the parents' awareness and perceptions regarding the implementation of single-dose HPV vaccination in Temeke District, Dar es Salaam. **Methodology:** A qualitative phenomenological study design was employed. Data were gathered through in-depth interviews and two focus group discussions with 23 purposively selected parents (both male and female) of girls aged 9–14 years from Chang'ombe ward in Temeke Municipal. A maximum variation sampling method ensured diverse perspectives. Interviews and FGD's were audio-recorded, transcribed, translated, and analyzed thematically with the support Atlas.ti software. Results: Most parents were aware that HPV vaccine prevent cervical cancer but had limited knowledge about the recent change to HPV single-dose schedule. Concerns about side effects and potential impact on fertility were common particularly among fathers. Mothers were generally more informed than father, they played a central role in vaccination decision making. Trust in healthcare providers and school-based programs promoted uptake, but challenges such as misinformation, cultural beliefs, logistical barriers, and lack of targeted awareness campaigns limited wider acceptance. Participants stressed the need for clear, accessible communication and consistent follow-up. **Conclusion:** Parents' awareness and perceptions of the HPV vaccination are mixed but low for HPV vaccine single dose, while many trust health authorities, concerns about safety and long-term effects persist. Mothers, as primary decision-makers, need better support and accurate information.

Strengthened community education, school outreach, and culturally sensitive strategies are key to improving vaccine uptake and protecting adolescent girls' health.

355. Naman, K.Y. (2025). Experience of central venous access self-care among patients undergoing haemodialysis at Kilimanjaro medical centre. Muhimbili University of Health and Allied Sciences.

Abstract

Background of the study: Central venous access (CVC) is vital for haemodialysis, providing reliable vascular access for blood filtration and return. Many patients experience complications such as infections and catheter malfunctions, contributing to high mortality, especially in resource-limited settings. Despite guidelines on proper care, data on factors influencing CVC self-care in Tanzania are limited, highlighting the need for targeted interventions to improve patient outcomes in nephrology. **Objective:** This study aimed to explore the experience of central venous access self-care among patients undergoing (Haemodialysis) HD at Kilimanjaro Christian Medical Centre, Kilimanjaro, Tanzania. Materials and methods: Explorative qualitative design using in-depth interviews was employed. A purposeful sampling used to recruit patients undergoing HD and semi structured interview guide used as data collection tools. Fifteen in-depth interviews were conducted, transcribed verbatim and analyzed thematically. **Results:** Three overarching themes and nine sub-themes emerged from the data. The first theme was facilitators of safe and effective catheter care, including the sub-themes: adherence to aseptic practices, precautionary behaviours for catheter site preservation, and receiving clinical assistance in catheter management. The second theme was patient experienced barriers in routine catheter care, which comprised the sub-themes: environmental and physiological challenges, staff shortage and competency constraints, and financial constraints. The third theme was educational needs for safe CVC care, including the sub-themes: patient-centred instructional methods, practical CVC care skills for infection prevention, and catheter care competencies and reinforcement. **Conclusion:** The study found that patients' engagement in hygiene, protective behaviours, and support from healthcare providers were facilitators of central venous access care. Barriers were identified as environmental and physiological discomforts, healthcare system limitations, and financial constraints. Participants also expressed the need for continued, practical education, preferring face-to-face teaching and requesting specific guidance on catheter care, both for themselves and for healthcare trainees.

356. Nasra, M.S. (2025). Quality Of Life in Adult Patients with Allergic Rhinitis Attending Otorhinolaryngology Clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Allergic rhinitis (AR) is a chronic, IgE-mediated inflammatory condition of the nasal mucosa resulting from repeated exposure to environmental allergens. It affects an estimated 10–40% of adults worldwide, with increasing prevalence in regions including Africa and Asia. Although not life-threatening, AR causes persistent symptoms such as nasal congestion, sneezing, itching, and ocular irritation that significantly impair quality of life (QOL). These symptoms

contribute to sleep disturbances, daytime fatigue, reduced concentration, emotional distress, and diminished social and occupational functioning. Despite the availability of effective pharmacological treatments, disease management is often hindered by unsupervised use of over-the-counter medications, limited specialist access, high treatment costs, and poor adherence, particularly in law resource settings. In Tanzania, data on the burden of AR and its impact on quality of life are scarce. Therefore, evaluating QOL in adult patients attending Otorhinolaryngology Department at Muhimbili National Hospital is essential to enhance clinical care and inform targeted public health strategies. **Aim of the study:** Was to determine the quality of life in adult patients with allergic rhinitis attending otorhinolaryngology clinics at Muhimbili National Hospital. **Method and materials:** A prospective hospital-based cross-sectional study was conducted from November 2024 to April 2025 at the otorhinolaryngology Clinic at Muhimbili National Hospital. A total of 190 adult patients diagnosed with allergic rhinitis were recruited using convenience sampling technique. The severity of AR was classified according to ARIA guidelines into four categories: mild intermittent, moderate/severe intermittent, mild persistent and moderate/severe persistent. Quality of life was assessed using the validated Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ), comprising 28 items across seven domains. Each item was scored on a 7-point scale, with mean scores categorized as mild (<3) or severe (≥3) impairment. Data were analysed using Statistical Package for the Social Sciences version 27, and association between allergic rhinitis severity and quality of life were evaluated using the Chi square test. A p-value <0.05 was considered statistically significant. **Results:** A total of 190 adult participants diagnosed with AR were enrolled in the study and their age ranged from 18 to 68 years, with a mean age of 38 ± 13.3 years. Females were 119 (62.6%) outnumbered males 71 (37.4%) with a female to male ratio being 1.68:1. Majority of the study participants in this study were aged 31 – 43 years, 81 (42.6) Regarding disease severity based on the ARIA classification, the most prevalent category was moderate/severe intermittent AR 84 (44.2%), followed by mild intermittent 51 (26.8%), moderate/severe persistent 31 (16.3%), and mild persistent 24 (12.6%). No statistically significant association was found between AR severity and participants' age ($p = 0.08$) or sex ($p = 0.27$). Assessment of QOL using the Rhino conjunctivitis Quality of Life Questionnaire revealed that 61 (32.1%) of participants experienced severe quality of life impairment, while 129 (67.9%) had mild impairment. Although differences in QOL impairment by age and sex were not statistically significant, female participants and those aged 31–43 reported higher rates of severe impairment. A significant association was observed between the severity of AR and QOL impairment ($p < 0.001$). Participants with moderate/severe persistent AR had the highest proportion of severe QOL impairment (77.4%), while only 5.9% of those with mild intermittent AR reported severe impairment in quality of life. **Conclusion:** This study confirms allergic rhinitis pose significant impairment in ones' quality-of-life, with moderate/severe intermittent AR as the dominant subtype. A strong association was found between AR severity and QOL impairment, emphasizing the need for early ARIA-guided classification. While females and young adults showed higher disease prevalence and QOL impact trends, the lower severe QOL impairment rate suggests prior treatment of allergic rhinitis among such individuals. **Recommendation:** Implementation of the ARIA classification within routine clinical practice to support personalized management of allergic rhinitis, expanding research across multiple regions of Tanzania to achieve

nationally representative data, and conducting longitudinal studies to assess treatment adherence, symptom progression, and changes in quality of life over time.

357. Nassor, N.K. (2025). Health facility readiness in responding to Cholera outbreak. Muhimbili University of Health and Allied Sciences

Abstract

Background: The recurrence of cholera outbreaks remains a significant public health threat that puts immense pressure on the health facility's readiness in response to outbreaks. The ability of healthcare workers to foster preparedness is important in enhancing timely and effective detection, control, and management of cholera as well as functioning health facilities ready and capable of responding to the cholera epidemic. **Aim**: To assess the readiness of health facilities in responding to cholera outbreaks based on 14 cholera criteria. **Material and methods:** This is a descriptive cross-sectional study using mixed-method design conducted in eight health facilities in Zanzibar. The quantitative assessment based on 14 cholera preparedness criteria collected electronically and analyzed using STATA V.15, and qualitative data from in-depth interviews with health officials, and healthcare workers were audio recorded, transcribed, coded using an excel spreadsheet, and deductive thematic analysis approach was applied, guided by the 14 cholera readiness criteria, to identify key themes and patterns related to facility readiness. **Results:** The results show that five criteria out of 14 were met by both primary and secondary health facilities. Despite the primary health facilities outperform the secondary health facilities in criteria 1,6,8, and 10**.** Qualitative results revealed resource shortages, weak referral systems, and limited coordination as major challenges. **Conclusion and Recommendations:** The study found that overall readiness of health facilities remains limited. The primary health facilities performed better than secondary health facilities across several criteria. Also, the study highlights critical gaps in isolation areas, emergency supplies, waste management, district-level coordination, infrastructure, workforce capacity, and emergency funding is essential to improve preparedness. These findings provide valuable insights for improving health systems and underscore the need for continued monitoring, research, and policy support.

358. Nassoro, A. (2025). Impact of delayed tertiary care presentation on quality of life in adults with musculoskeletal tumors: A longitudinal study from Muhimbili Orthopedic Institute, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Musculoskeletal tumors are a group of diverse neoplasms affecting the bones and surrounding soft tissues. They account for up to 1% of all tumors worldwide, with significant diagnostic and management challenges, particularly in low resource settings. Delayed presentation to tertiary care defined as more than three months from initial symptom onset which is attributed to several factors ranging from socio economic, psychological and, health system factors, leading to advanced disease stages, poor outcomes and reduced quality of life (QoL). **Objective:** To determine the factors associated with delayed presentation to tertiary care and its impact on quality of life among adult patients with musculoskeletal tumors treated at Muhimbili Orthopedic Institute

(MOI), Tanzania. **Methods:** A hospital-based longitudinal study conducted from July to December 2024. Ethical clearance was sought at Muhimbili University of health and allied sciences Institutional Review Board. A total of 44 adult patients who clinically and histologically confirmed musculoskeletal tumors were enrolled. Data on demographics, factors associated with delayed presentations, treatments were collected using a structured questionnaire and delayed presentation was assigned to any patient attending to tertiary care after 3 months of symptoms onset, Short Form 36 Health Survey was used to evaluate QoL at enrollment and three months after initiation of treatment. Data analysis was performed using SPSS 27. Continuous variables were summarized using medians and interquartile ranges, while categorical variables were analyzed using frequencies tables. A non-parametric Wilcoxon Signed-Rank Test, Chi square test was applied to test significance on factors associated with delayed presentation and quality of life at enrolment and three months after initiation of treatment ($p < 0.05$). **Results:** Among 44 patients, 95.5% (n=42) presented more than 90 days of symptom onset. The median delay for malignant and benign tumors were 365 days (1 year) and 500 days (1 year, 5 months) respectively. Primary malignant tumors were most prevalent (36.4%), followed by benign latent tumors (20.5%) and metastatic malignancies (18.2%). The major reasons for delay included lack of awareness (81.0%), delayed referrals (42.9%), and financial constraints (40.5%). Treatments included surgery for about 79.5% of patients, others were chemoradiotherapy and palliative care. Post-treatment quality of life significantly improved in pain, energy, fatigue, and general health domains, especially in patients with benign tumors. Quality of life improvements were more modest in malignant and metastatic cases. **Conclusion:** Delayed presentation of musculoskeletal tumors is highly prevalent and primarily influenced by modifiable factors like limited disease awareness and referral delays. Although treatment led to improvements in quality of life, especially among benign cases, outcomes for malignant and metastatic tumors remained suboptimal due to advanced disease at presentation.

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359. Nchimbi, E. (2025). Molecular characteristics of *escherichia coli* causing community-acquired Urinary Tract Infections in Dar es salaam, 2021. Muhimbili University of Health and Allied Sciences.

Abstract

Background: UTIs are common worldwide, mainly caused by E. coli. The emergence of multidrug-resistant strains with resistance and virulence genes poses a significant health threat, yet molecular data from Tanzania remain limited. This study examined these genes in community-acquired E. coli UTIs in Dar es Salaam.**Methods:** This was a laboratory-based experiment that analyzed E. coli isolates from urine samples of outpatients diagnosed with UTIs in Dar es Salaam. Polymerase Chain Reaction (PCR) was used to detect resistance genes (bla-TEM, bla-CTX-M, bla-SHV, aac(6')-Ib-cr, qnrA, qnrB, qnrS) and virulence genes (ompA, traT, eaeA, bfp). Descriptive analysis summarized gene prevalence and co-occurrence, while phenotypic and genotypic comparisons were made against antimicrobial susceptibility profiles. **Results:** A total of 20 E. coli isolates were analyzed. bla-TEM and aac(6')-Ib-cr were detected in 60% of isolates each, followed by bla-CTX-M (30%) and qnrS (25%). bla-SHV, qnrA, and qnrB were not detected. Virulence genes were highly prevalent, with ompA (95%) being the most prevalent, followed by

traT (55%), eaeA (55%), and bfp (40%). bla-TEM was strongly associated with resistance to ampicillin, tetracycline, and trimethoprim-sulfamethoxazole, while bla-CTX-M was linked to cephalosporin resistance. aac(6')-Ib-cr was frequently detected in isolates resistant to cephalosporins and aminoglycosides. Co-occurrence analysis showed frequent overlap of resistance and virulence determinants, notably ompA with bla-TEM (55%) and ompA with qnrS (60%). Overall, 85% of isolates carried both resistance and virulence genes, indicating high pathogenic potential and limited treatment options. **Conclusion:** MDR E. coli strains harboring both resistance and virulence genes are widespread among community-acquired UTIs in Dar es Salaam.

360. Ndanshau, L.E. (2025). *BRCA1* and *BRCA2* germline variants and their proportions in relation to clinicopathological characteristics among triple negative breast cancer patients at ORCI. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: The tumor suppressor genes *BRCA1 and BRCA2* generate proteins that help fix damaged Deoxyribonucleic acid (DNA*)*. Variations of mutations arise when these genes undergo modifications. *BRCA1* and *BRCA2* gene mutations are linked to a higher chance of developing several cancers, including prostate, ovarian, and breast cancer. In families with two or more occurrences of ovarian, breast, and prostate cancer, *BRCA1* and *BRCA2* variants are prevalent. Multiple studies have shown that up to 20–30% of unselected triple-negative breast cancer (TNBC) patients carry germline *BRCA* mutations, with *BRCA1* being more commonly associated with the TNBC phenotype. However, research also indicates that *BRCA2* mutations are more prevalent or at least more frequently detected in several African populations. Despite this evidence, Tanzania has limited infrastructure for genetic testing, which contributes to the high prevalence of late-stage breast cancer diagnoses, as it hampers effective genetic diagnosis, counseling, and risk management for affected families. **Objective of the study**: To investigate *BRCA1* and *BRCA2* germline variants and their proportions in relation to clinicopathological characteristics among triple-negative breast cancer patients in ORCI. **Methodology**: This descriptive cross-sectional study was conducted at the ORCI in Tanzania. 4 milliliters of venous blood were drawn from patients who had been diagnosed with breast cancer and had a family history of the disease or were younger than 45. Clinicopathological data were extracted from the patients' medical records. Using consecutive sampling, 20 breast cancer patients were selected from a larger cohort of 60 patients who met the study's inclusion criteria. Among them, 19 were confirmed to have triple-negative breast cancer (TNBC). DNA was extracted from all 20 samples, followed by singleplex PCR and Oxford Nanopore sequencing using the native barcoding kit. Statistical and bioinformatics analyses were then conducted to explore the association between patients' clinicopathological characteristics and genetic testing results. **Results:** Among 20 breast cancer patients (mean age 36.2 years), 95% had triple-negative breast cancer (TNBC). Germline *BRCA1* and/or *BRCA2* mutations were identified in 68.4% (13/19) of TNBC cases. *BRCA2* mutations (10/13) were slightly more frequent than *BRCA1* (8/13), with five patients carrying mutations in both genes. A total of 22 variants were identified, 77.2% pathogenic and 22.7% likely pathogenic, including recurrent *BRCA2* variants (c.6359C>G, c.7433del, c.7964A>G). Most mutation-positive patients

resided in Dar es Salaam (84.6%) and had high-grade tumors (69%), primarily of ductal histology. Metaplastic carcinoma was seen only in *BRCA-positive* patients. Tumor size was predominantly T3 and T4b, with right breast involvement most common (69%). One *BRCA-positive* patient had bilateral disease. **Conclusion:** The study revealed a high burden of *BRCA* mutations among TNBC patients, with a slightly higher prevalence of *BRCA2* mutations compared to *BRCA1*. The identification of recurrent and clinically significant variants supports the need to integrate routine *BRCA* genetic testing into breast cancer care in Tanzania.

361. Ndiwu, P. (2025). Prevalence and factors *associated* with hepatitis b virus infections among pregnant women attending antenatal care in Ruvuma region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hepatitis B virus (HBV) infection is a major global health concern, with mother-to-child transmission being the primary route in endemic regions. The asymptomatic nature of HBV further hinders early detection, leading to ongoing silent transmission However, little is known about the burden of HBV infection among pregnant women in Ruvuma Region, Tanzania. This study assessed the prevalence and associated factors of HBV infection among pregnant women attending antenatal care (ANC) services **Materials and Methods:** A cross-sectional analytical study was conducted from March to May 2025 among 427 pregnant women attending ANC in five health facilities in Ruvuma Region. Participants were recruited using consecutive convenience sampling. Data on sociodemographic, healthcare related, and behavioral factors were collected through semi-structured questionnaires. Blood samples were screened for hepatitis B surface antigen (HBsAg) using the Determine HBsAg 2 rapid test, with confirmation by enzyme-linked immunosorbent assay (ELISA). Logistic regression analysis was used to identify factors associated with HBV infection, with significance set at $p < 0.05$. **Results:** A total of 427 pregnant women with mean age of 27±6years were recruited in the study. Out of the 427 pregnant women, 16 were screened positive for HBsAg rapid test and confirmed HBeAg positive by the ELISA indicating active HBV infection. The prevalence of HBV infection was 3.75% (16/427). Factors significantly associated with HBV infection included age ≥24 years (aOR = 6.41, 95% CI = 1.4-9.3, p=0.013), HIV-positive status (aOR = 9.18, 95% CI = 3.9-19.3, p=<0.001), and having multiple sexual partners (aOR = 3.47, 95% CI = 1.6-7.4, p=0.001). **Conclusion:** HBV infection remains a concern among pregnant women in Ruvuma Region. Older age (≥24 years), HIV co-infection, and multiple sexual partnerships were significant ass factors. Strengthening routine HBV screening in ANC and integrating services with HIV programs are crucial to reduce mother-to-child transmission.

362. Ndola, I. F. (2025). Predictors of Renal Function Recovery Following Percutaneous Nephrostomy in Patients with Bilateral Ureteric Obstruction at Muhimbili National Hospital and Orci. Muhimbili University of Health and allied since.

Abstract

Background: Worldwide, upper obstructive uropathy represents approximately 10% of all renal cases contributing to both acute and chronic kidney disease, including 5% of the chronic dialysis population. In patients with obstructive uropathy, a urinary diversion procedure is essential to prevent progressive kidney damage and subsequent uremia. Percutaneous nephrostomy (PCN) is a suggested medical procedure for treating obstructive uropathy when retrograde drainage or definitive surgical options are not feasible or indicated. Despite the success rate of PCNs in relieving upper urinary tract obstruction and its associated symptoms, some patients will not experience improvement in renal function of ≤ 2mg/dl or a 20% change in initial creatinine levels within four weeks post-intervention. **Objectives:** The study aimed to identify the predictors of renal function recovery among patients with upper urinary tract obstruction who underwent percutaneous nephrostomy at Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI) between 2018 and 2023.**Material and methods:** A retrospective cohort study was conducted at Muhimbili National Hospital (MNH) and Ocean Road Cancer Institute (ORCI) between November and December 2024. Using the IR department registers, 250 patients who underwent bilateral percutaneous nephrostomy (PCN) between 2018 and 2023 were identified by their medical registration numbers, and their files were retrieved from the medical records departments. Data were collected using a structured questionnaire, capturing age, sex, comorbidities, symptom duration, cause of ureteric obstruction, hydronephrosis grade, initial serum creatinine (iCr), and nadir serum creatinine (nCr), or a ≥20% change in iCr within 30 days post-PCN. iCr was defined as the last creatinine value before PCN; nCr as the lowest value after successful PCN. The data were then analyzed using SPSS version 27. Descriptive statistics were presented as means, medians, and frequencies. Associations between categorical variables were assessed using the Chi-square test. Modified Poisson regression was applied to adjust for confounders. A p-value < 0.05 was considered statistically significant. **Results:** This study examined 250 patients with bilateral ureteric obstruction who underwent PCN at MNH and ORCI between 2018 and 2023. The median age at presentation was 55 years, with the majority (47.2%) aged 45–59 years. Most of the participants were female (95.2%). The comorbidities included hypertension (30.4%), HIV (16.8%), Diabetes (8.8%), and CKD (2.4%). Clinically, oliguria/anuria was the most common presenting feature (93.6%), followed by flank pain (64%) and gastrointestinal symptoms (50%). Duration of symptoms exceeded two months in 36.8% of patients. Baseline median serum creatinine was 6.1 mg/dL (IQR: 3.2–11.1), potassium 5.1 mmol/L (IQR: 4.5–5.8), hemoglobin 8.4 g/dL (IQR: 7.5–9.4), and WBC count 9.6 $\times 10^3/\mu L$ (IQR: 6.9–13.0). Malignancy accounted for 94.4% of obstruction cases. Moderate hydronephrosis was most prevalent, accounting for 82% of all cases. Renal function improved in 67.2% of patients, demonstrating the potential for positive outcomes. Post-procedural median creatinine declined to 2.7 mg/dL (IQR: 1.5–5.1). Post-PCN, complications occurred in 20.8% of cases, with tube dislodgement (10.4%) and bleeding (8.4%) being the most frequent. In multivariable modified Poisson regression, diabetes mellitus (aPR = 0.12, p = 0.001), HIV infection (aPR = 0.30, p = 0.016), prolonged symptom duration >2 months (aPR = 0.07, p < 0.001), and severe hydronephrosis (aPR = 0.24, p = 0.002) were independently associated with reduced probability of renal recovery. Pre-PCN creatinine did not significantly impact outcome after adjustment. **Conclusion:** Bilateral ureteric obstruction primarily affects middle-aged and older adults, especially females. After percutaneous nephrostomy, most patients improved renal function,

though complications like tube dislodgement and bleeding occurred. xiii Recovery depended on comorbidities, symptom duration, hydronephrosis severity, and pre-procedure renal function. Patients with shorter symptom duration and milder hydronephrosis had better outcomes. These findings emphasize the need for early diagnosis and prompt intervention to enhance renal recovery and reduce complications, providing useful insights for clinical practice research.

363. Ndovanga, P. M. (2025). Estimated blood loss and its associated risk factors among patients with isolated closed femoral shaft fractures treated with open intramedullary nail at Muhimbili Orthopaedic Institute (MOI). Muhimbili University of Health and Allied Sciences.

Abstract

Background: Open intramedullary nailing to the femoral shaft fracture is a mainstay of treatement in limited resource countries where the closed intramedullary nailing is not feasible. This method documented to have significant Intraoperative blood loss that can necessitate blood transfusion. Previous published local study revealed about half of the patient operated were transfused. However, there is limited local data reporting estimated blood loss and associated risk factors specifically to isolated femoral shaft fracture.**Aim:** To determine estimated intraoperative blood loss and factors associated among patients with closed isolated fracture of the femur shaft managed by open Intramedullary nailing at Muhimbili Orthopedic Institute.**Methodology:** This was a hospital-based cross-sectional study conducted at Muhimbili Orthopedic Institute. It included patients aged 18 years and above with isolated femoral shaft fractures managed surgically by open intramedullary nailing. Convenience sampling was used to recruit eligible patients. Pre-, intra-, and postoperative data via structured questionnaire and hospital records.Blood Loss Estimation done by considering Pre- and postoperative Hb/hematocrit levels; Hb difference formula adjusted for transfusions. Analysis was performed using SPSS version 27. **Results:** A total of 40 patients with isolated closed femoral shaft fractures underwent open intramedullary nailing. The mean age was 32 ± 11 years, with 50% under 30 years, and 82.5% were male. The average estimated blood loss, reflected by a mean hemoglobin drop of 3.5 g/dL, was significant. The mean preoperative hemoglobin was 12.2 g/dL, decreasing to 9.0 g/dL postoperatively. Blood transfusion was required in 12.5% of patients, who tended to have lower preoperative hemoglobin levels. Linear regression showed that female sex($p = 0.018$) and tranexamic acid(,$p = 0.036$) use were significantly associated with reduced blood loss. Other variables, including age, fracture type, timing of surgery, and surgical technique, were not significantly associated. **Conclusion:** . Average intraoperative blood loss during open IMN for closed femoral shaft fractures was significant. Female sex and TXA use were protective against excessive blood loss. **Keywords:** femoral shaft fracture, associated factors, estimated blood loss, open intramedullary nailing.

364. Neema, M. (2025). Prevalence, Knowledge, Attitude and Factors Associated with Good Genital Hygiene Practices Among Women of Reproductive Age in Ubungo District, Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Poor genital hygiene among women of reproductive age is a global public health concern contributing to genitourinary infections. Factors such as knowledge, attitude, education, income, and cultural practices influence genital hygiene, yet data on these determinants urban community settings remain limited. **Objective:** This study assessed prevalence of genital hygiene practices, knowledge, attitudes, and associated factors among women of reproductive age in Ubungo district, Dar es Salaam, Tanzania. **Methods and tools:** A cross-sectional community-based study was conducted in Ubungo District, Dar es Salaam, Tanzania. Data were collected from the households across 15 randomly selected streets in the Ubungo district. Primary data were collected through the use of administered structured questionnaires among adults aged 18 years and above. Data were analysed using STATA version 17. Univariate analysis of socio-demographic characteristics, knowledge and attitude toward good genital hygiene was performed. A multivariable modified Poisson regression was conducted to determine the factors that are associated with good genital hygiene. A p-value of less than 0.05 and 95% confidence intervals were used to decide on the statistical significance of the estimates. **Findings:** A total of 426 women participated, with a median age of 26 years; most were aged 15-24 years (43.4%) and had at least secondary education (87.1%). Overall, 41.2% practiced good genital hygiene,97.2% had good knowledge, and 96.0% showed positive attitudes. In the multivariable analysis, age, education, income and employment were significantly associated with good genital hygiene practices. Women aged 35–44 years (aPR = 1.59; 95%CI: 1.25–2.04) and ≥45 years (aPR = 1.81; 95% CI: 1.56–2.08), those with secondary (aPR = 1.68; 95% CI: 1.10–2.56) and tertiary education (aPR = 1.64; 95% CI: 1.01–2.65), and middle- or high-income earners (aPR = 1.77; 95% CI: 1.21–2.58 and aPR = 1.85; 95% CI: 1.30–2.64, respectively) were more likely to practice good genital hygiene. **Conclusion and Recommendations:** Older women showed better practice of genital hygiene than younger women, despite younger women having higher knowledge and positive attitudes. Age, education, income, and employment were significant factors. These findings call for targeted BCC interventions for young women, improved water supply, and integration of genital hygiene education into reproductive health programs.

365. Ng'ang'a, K.N. (2025). Treatment delay and associated factors among pediatric patients with cataract attending Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Pediatric cataract is the leading cause of childhood blindness, with early treatment critical to preventing irreversible visual impairment. Despite global guidelines recommending surgery within the first 4–8 weeks of life, delay persists due to multifaceted barriers at caregiver, health system, and surgical levels, particularly in low-resource settings like Tanzania. Aim: To determine the proportion of children with treatment delay and assess the associated factors among children with cataract attending the pediatric eye clinic at Muhimbili National Hospital. **Methods:** A hospital-based cross-sectional study was conducted at Muhimbili National Hospital from June to December 2023, enrolling 61 children aged 0–15 years with cataracts through consecutive sampling technique. Data were collected through structured interviews and medical record reviews, analyzing three levels of delay: primary, secondary, and tertiary. SPSS version 26 was

used for statistical analysis, including descriptive statistics and modified Poisson regression. **Results:** The children study population had a median age of 36 months (IQR 12.54-85.44), with 65.6% males and 59% from rural areas. Treatment delay occurred in 78.7% of cases, with secondary delay being most prevalent (70.5%) followed by primary delay (67.2%). Only 14.8% experienced tertiary delay. Primary delay was significantly associated with being an only child (aPR=2.716, p<0.001). Secondary delay was linked to rural residence (aPR=1.622, p=0.048) and older age (>13 months, aPR=2.144, p=0.030). No significant factors were identified for tertiary delay. **Conclusion:** Approximately 8 out of every 10 children experienced cataract treatment delay, predominantly at secondary followed by primary levels, with key factors being rural residence as well as older age and lack of siblings, respectively. **Recommendations:** Targeted interventions, such as incorporating eye health in maternal education during antenatal visits, providing transport subsidies for rural patients, and mandatory red reflex testing at all pediatric visits, especially at critical developmental milestones. **Keywords:** Pediatric cataract, treatment delay, Tanzania, maternal education, visual impairment.

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366. Ng'umbi, F.A. (2025). Assessment of PD-L1 expression and related factors using immunohistochemistry in patients with triple negative breast cancer at Muhimbili National Hospital Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: In Tanzania, breast cancer (BC) is the second leading cancer in women after cervical cancer. Unfortunately, Triple Negative Breast Cancer (TNBC) patients cannot benefit from hormonal therapy due the loss of target receptors. Currently, PD-L1 (programmed deathligand 1) mediated immunotherapy in TNBC, has emerged as a therapeutic option accepted to overcome the limitations of chemoradiotherapy, which frequently provide limited responses. Broad objective: To evaluate the PD-L1 expression in patients with triple negative breast cancer in Tanzania during the study period January to December 2024. **Material and methods:** This was a laboratory based retrospective cross-sectional study in which Formalin Fixed Paraffin Embedded (FFPE) tissue blocks of 90 cases diagnosed with TNBC were retrieved and reviewed, histologically subtyped and graded based on Nottingham system thereafter immunostained with PD-L1 antibody. Patients' demographic data were retrieved from request forms and were studied in association with PD-L1 expression. **Results:** The ages of patients ranged from 17 to 84 years, (mean 49.2 ±11 years). The mean age at diagnosis was 53 ±12.6 years. About 37.8% of the tumors had the greatest dimension of (2 – 5) which was the majority. Grade II showed to be the most predominant (65.6%) of the cases. A significant (37.8%) proportion of TNBC patients showed positive PD-L1 expression, whereas the rest (62.2%) had negative expression. The most common (62.2%) staining pattern was cytoplasmic; and **Conclusion and recommendation:** This current study has shown that the observed PD-L1 expression among TNBC patients at MNH apppears to fall within the lower–mid range of global estimates and more comparable to African/Asian cohorts but not to Western reports which could partly be due to biological, demographic, environmental as well as sampling differences. Furthermore, our current study suggests a statistically significant association between tumor grade and PD L1 expression which may inform the categorization of TNBC patients for

consideration for possible Immune checkpoint inhibitors targeted therapy and thus improve the treatment outcome.

367. Ngaponda, E.E. (2025). Unit cost and cost drivers of providing Methadone Maintenance treatment at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Substance use disorders, particularly opioid addiction are an escalating global and regional challenge with major health and economic consequences. Methadone Intervention is proven to be effective in drug related harm reduction, but evidence on the cost associated with its implementation remains uncertain. Little is known about the comprehensive cost analysis of running this intervention. Addressing this knowledge gap is important to inform policy makers not only on the average cost when considering expansion of treatment across the country but also to facilitate the management of clients with substance use disorders. **Objective:** This study was conducted to determine the unit cost and cost drivers associated with methadone maintenance intervention at Muhimbili National Hospital. **Methods:** This study used a retrospective quantitative cross-sectional design to estimate the unit cost and cost drivers of methadone maintenance intervention at Muhimbili National Hospital from the provider's perspective from 1st July 2023 to 30th June, 2024 involving 700 clients. Cost data were collected by conducting face to face interviews with facility staff involved in service delivery and by reviewing the documents. The analysis was done using Microsoft excel to calculate the total annual cost and the unit cost which was obtained by dividing the total cost by the number of clients served. The study further analyzed the percentage contribution of each cost component, such as capital (building, furniture, and equipment), direct and indirect. Results were presented using tables, pie charts, and bar charts. **Results:** The annual unit cost for the provision of methadone maintenance intervention was found to be USD 66.7. Capital, direct, and indirect costs contributed to 8%, 76% and 16% of the total cost, respectively. Among all components, personnel salaries held a bigger portion of the share (38.9%), followed by the cost of methadone (27.8%). The average methadone dose per patient per day was 120mg. However, this study excluded costs related to training, drug importation, and distribution. **Conclusion:** This study found that the cost of methadone treatment at Muhimbili is comparable to other settings and revealed a unit cost that can guide the scale-up of services in other regions, supporting informed decisions on resource allocation and sustainability.

368. Ngowi, G. J. (2025). Prevalence of self-reported renal function test uptake and factors associated among people living with HIV/AIDS on antiretroviral therapy in Njombe, 2024. Muhimbili university of health and Allied Sciences.

Abstract

Background: The use of antiretroviral therapy (ART) has significantly changed the impact of the burden of HIV/AIDS by decreasing the number of AIDS related deaths, and improving the quality of life of people living with HIV (PLHIV). However, the advanced and prolonged use of ART has resulted in several challenges, including the increase of AIDS-related non-communicable

conditions such as cardiovascular diseases, kidney diseases, and others. Hence, the World Health Organization (WHO) has recommended that renal functional tests should be routinely performed before ART initiation and at least annually to closely monitor and prevent kidney diseases among PLHIV. However, globally, in 2022, it was estimated that only 26% of PLHIV on ART were screened for renal function before ART initiation, suggesting suboptimal testing of renal function in most settings (10). **Objective of the study:** This study aimed to determine the prevalence of self-reported uptake of renal function tests and the factors associated with it among PLHIV on antiretroviral therapy in Njombe, Tanzania. **Materials and methods:** An analytical cross-sectional study was conducted in Njombe, Tanzania, for a period of three months from February to April 2025. Three (3) health facilities, namely, Njombe Regional Referral Hospital (RRH), Njombe Town Hospital and Njombe Health Centre, were involved. The facilities and clients were selected through a two-stage cluster random sampling technique. A well-structured questionnaire was used to collect information on the renal function test from the PLHIV. Data entry was done by using Microsoft Excel 2019, and analysis of data was performed using STATA 17 of 2021. A chi-square test was used to determine differences across categories, and the modified Poisson regression analysis was used to determine the factors associated with self-reported prevalence of renal function tests uptake. A p-value of less than 0.05 was considered significant. **Results:** A total of 566 PLHIV aged 18 years and above, on ART for more than a year (12 months) from three health facilities in Njombe region were enrolled in the study. The participants had a mean age of 44 years, with a standard deviation (SD) of 10.56, with the majority 62.4%, being over 40 years old. Most participants, 62%, were female and lived in urban areas (63.1%). Over half (54.9%) were married, and the majority 69.5%, had attained only primary level education. More than 70% of the participants were unemployed. The prevalence of renal function test (RFT) before ART initiation was 11.3%. Factors independently associated with RFT uptake were being employed (aPR 1.3, 95% CI 1.20-1.36, p<0.001), being covered by health insurance (aPR 1.4, 95% CI 1.32- 1.53, p<0.001), and those with a hypertension condition (aPR 1.1, 95% CI 1.08-1.22, p<0.001). **Conclusion:** The present study found a low uptake of renal function tests among PLHIV before ART initiation in the Njombe region. Key factors influencing RFT uptake included being covered by health insurance, having a hypertension condition, and being employed. These findings inform the ART program in Tanzania on the need for support and effective monitoring of renal function and other relevant tests among PLHIV in Tanzania.

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369. Ngoyeji, S.N. (2025). Oral Cavity and Oropharyngeal Manifestations Among Patients with Chronic Kidney Disease Attending Nephrology Clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic kidney disease (CKD) is a major public health problem with a prevalence of about 14% in Tanzania. Worldwide, nearly 90% of CKD patients exhibit at least one oral cavity and/or oropharyngeal manifestation, highlighting the magnitude of the problem. These include xerostomia, dysgeusia, candidiasis, halitosis, angular cheilitis, stomatitis and mucosal ulceration which significantly affect patients' quality of life and overall health outcomes. Most of these manifestations result from high level of urea in the saliva, immunological alterations, dehydration,

medication side effects, and reduce salivary gland function. **Aim of the study:** The aim of this study was to determine the prevalence, types of oral cavity and oropharyngeal manifestations and its association with the stages of chronic kidney disease (CKD) among patients attending nephrology clinic at Muhimbili National Hospital. **Method and materials:** A hospital-based cross-sectional study was conducted at the nephrology clinic of Muhimbili National Hospital, from November 2024 to April 2025. The study involved 220 adult patients (≥18 years) with CKD, selected using convenience sampling technique. Data collection included structured interviews, clinical examination, and CKD staging using the Kidney Disease Improving Global Outcomes 2022 staging guidelines. Oral cavity and oropharyngeal manifestations were assessed through standardized clinical criteria and tools such as a headlight, tongue depressor, and indirect laryngeal mirror. The primary outcome was the presence and types of oral cavity and oropharyngeal manifestations. Data were analysed using Statistical Package for Social Sciences, version 27, with categorical variables being summarized as proportions. Association was assessed using chi-square tests and Poisson regression to estimate adjusted prevalence ratios (aPRs), controlling for age, sex, hypertension, and diabetes mellitus. **Results:** A total of 220 patients with CKD were enrolled, and were aged between 35 and 85 years, with a median age of 57 years and interquartile range of 49–64 years. The age group with the highest participants was 55-64 years (37.7%). Males predominated (58.2%) and resulting in a male-to-female ratio of 1.4:1. The commonest comorbidity was hypertension (67.7%) The majority of patients (39.5%) were in CKD stage 5, while only 6.8% were in stage 1. Overall, 26.4% of patients had at least one oral cavity and oropharyngeal manifestation. The highest prevalence was observed in stage 4 CKD (42.2%) and the lowest in stage 1 (6.7%), with a statistically significant association between CKD stage and presence of oral cavity and oropharyngeal manifestations (p=0.03). Xerostomia was the most prevalent manifestation (84.5%), followed by dysgeusia (50%), while angular cheilitis was the least common (6.9%). Patients with advanced CKD had a 2.5 times higher prevalence of xerostomia compared to those with early CKD (p=0.014). After adjusting for age, sex, hypertension, and diabetes mellitus, the association remained statistically significant (adjusted prevalence ratio [aPR]=2.4, p=0.02). Similarly, the prevalence of dysgeusia was 2.4 times higher among patients with advanced CKD than those with early CKD, though this was not statistically significant in the unadjusted analysis (p=0.06). However, after adjustment, the association became statistically significant (aPR=2.45, p=0.04). **Conclusion and recommendations:** This study highlights a notable burden of oral cavity and oropharyngeal manifestations among patients with chronic kidney disease, with 26.4% experiencing at least one symptom. The commonest symptoms were xerostomia and dysgeusia. These manifestations were significantly more prevalent in advanced stages of CKD, particularly stage 4. The results suggest that progression of CKD contributes to oral cavity and oropharyngeal health deterioration through systemic effects such as uremia, reduced salivary flow, and immunosuppression. Given these findings, it is recommended that routine oral and oropharyngeal assessments should be integrated into CKD care, especially for patients with advanced disease. A multidisciplinary approach involving nephrologists, otorhinolaryngologist, and dental professionals is essential for early identification and management of oral cavity and oropharyngeal manifestations in patients with CKD. Additionally, patient education and awareness of oral and oropharyngeal manifestations should be prioritized to enhance quality of life and reduce complications.

370. Ngumbe, H. (2025). Socio-cultural, environmental, and reproductive health factors associated with female infertility among women of reproductive age at Muhimbili National Hospital, Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Infertility, a neglected sexual reproductive health issue, affects 8–12% of couples globally, amounting to over 186 million individuals, with a higher prevalence in underdeveloped nations. In sub-Saharan Africa, 30-40% of women complete their reproductive years without children, while in Tanzania, infertility affects 16% of couples, presenting a public health challenge. Urban areas like Dar es Salaam report even higher rates, with 65.9% of infertility cases attributed to sociocultural, reproductive health and environmental factors such as lifestyle choices, oxidative stress, and occupational exposure to pollutants, which hinder conception after one year of unprotected intercourse. **Broad Objective:** To assess the sociocultural, environmental, and reproductive health factors associated with female infertility among women of reproductive age attending Obstetrics and Gynaecology clinics at Muhimbili National Hospital in Dar es Salaam, Tanzania. **Methodology:** This study employed a hospital-based cross-sectional design using a quantitative research approach. The target population comprised women of reproductive age (15–49 years) attending the Obstetrics and Gynaecology clinics at Muhimbili National Hospital in Dar es Salaam, Tanzania. Data were collected using structured, self-administered questionnaires adapted from previously validated instruments to ensure reliability and internal consistency. A total of 230 eligible participants were recruited through convenience sampling. **Results:** Among the 230 women of reproductive age who participated in the study at Muhimbili National Hospital, the mean age was 32.2 years (SD ± 4.8), with the largest proportion (83 participants; 35.7%) falling within the 30–34-year age group. The mean age at menarche was 14.4 years (SD ± 1.05), and the majority of participants (198 women; 86.1%) reported experiencing menarche between the ages of 12 and 14 years, which is considered within the normal physiological range. Out of the total participants, 138 women (58.3%) were identified as infertile. Among them, 55 women (23.9%) had primary infertility, while 79 women (34.4%) were classified as having secondary infertility. xvi Multivariate logistic regression analysis identified several factors that were significantly associated with female infertility. Urban residence was found to be a significant predictor (AOR = 3.447; 95% CI: 1.410–8.429; P = 0.007). Among sociocultural variables, alcohol consumption showed a significant association with infertility (AOR = 3.545; 95% CI: 1.250–10.053; P = 0.017). Environmental exposure to pesticides was also significantly linked to infertility (AOR = 6.555; 95% CI: 1.464–29.341; P = 0.014). Regarding obstetrical history, previous use of Depo Provera injections was strongly associated with infertility (AOR = 8.054; 95% CI: 2.098 30.915; P = 0.002). Among gynaecological factors, an abnormal menstrual cycle pattern (Irregular menstrual cycle) demonstrated the strongest association with female Infertility (AOR = 18.612; 95% CI: 6.913–50.111; P < 0.001). These findings highlight the complex interplay of demographic, sociocultural, environmental, obstetrical, and gynaecological factors contributing to female infertility in this population. **Conclusion:** This study revealed a high prevalence of infertility

(58.3%) among women of reproductive age attending the Obstetrics and Gynaecology Clinic at Muhimbili National Hospital, with 23.9% experiencing primary infertility and 34.4% experiencing secondary infertility. The mean age of participants was 32.2 years, and the average age at menarche was 14.4 years, largely within the normal range. Several factors were significantly associated with female infertility. These included urban residence, alcohol consumption, exposure to pesticides, prior use of Depo Provera injections, and abnormal menstrual cycle patterns. Notably, menstrual irregularities exhibited the strongest association with infertility. These findings underscore the multifactorial nature of infertility and highlight the importance of considering sociocultural, environmental, obstetrical, and gynaecological factors in the assessment and management of female infertility in urban Tanzanian settings. **Keywords:** Sociocultural, Environmental, Reproductive health, and Female Infertility.

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371. Nguruwe, D. P. (2025). ABC-ven analysis of medicine expenditure at Muhimbili National Hospital from 2021 to 2024. Muhimbili university of health and Allied Sciences.

Abstract

Background: Efficient medicine management is essential for optimizing health service delivery, directly impacting treatment outcomes and resource utilization. The ABC-VEN analysis is a proven inventory management tool that combines cost-based categorization (ABC) with clinical importance classification (VEN) to inform procurement and inventory management decisions. This study applied ABC-VEN analysis to assess pharmaceutical expenditure at Muhimbili National Hospital (MNH) from 2021 to 2024. Objective: This study assessed the application of the ABC-VEN approach in evaluating and managing medicine expenditure at Muhimbili National Hospital (MNH) from 2021 to 2024, and explored institutional factors influencing its effective implementation. **Methodology:** A hospital-based cross-sectional design was employed using both quantitative and qualitative methods. Quantitative data on all medicines procured between 2021 and 2024 were extracted from procurement and inventory records in the JEEVA system. Medicines were categorized using ABC and VEN analyses and combined into the ABC-VEN matrix to identify expenditure patterns and management priorities. Qualitative data were collected through key informant interviews with pharmacy and procurement staff to explore barriers and facilitators affecting ABC-VEN implementation. Quantitative data were analyzed descriptively, and qualitative data were analyzed thematically. **Results:** Out of 1,083 medicines analyzed, Category A (6%) consumed 71.4% of the total pharmaceutical budget. The VEN classification revealed that Vital medicines, though only 9.4% of the items, accounted for 47.1% of total spending. Combined ABC-VEN analysis showed that Category I medicines (primarily A-V, A-E, B-V) consumed 88.9% of the budget, emphasizing their critical role in both cost and clinical importance. Notably, several high-cost medicines classified as Non-Essential (A–N) presented opportunities for rationalization. Despite a 67.7% decline in total pharmaceutical expenditure over the three years attributed to decentralization and service redistribution spending on Category I items remained dominant. **Conclusion:** The study demonstrates that ABC-VEN analysis is a valuable decision-support tool for rationalizing medicine expenditure and prioritizing essential supplies at tertiary hospitals. Institutionalization of this approach through staff training, electronic

system integration, and policy reinforcement would strengthen evidence-based procurement and improve resource efficiency at MNH and similar facilities.

372. Ngwalu, U. (2025). Factors influencing the use of modern contraceptives among women living with HIV in Ilala districts, Dar es salaam region, Tanzania. f Muhimbili University of Health and Allied Sciences.

Abstract

Background: The use of modern contraceptives among women living with HIV (WLHIV) remains suboptimal. Low uptake of these contraceptives increases the risk of unplanned pregnancies. The Tanzanian government has integrated family planning services with HIV care to improve access and utilization, particularly among women living with HIV. However, despite the integration of HIV and family planning services there are still few WLHIV using contemporary forms of contraception. **Objective:** To explores the factors influencing the use of modern contraceptives among women living with HIV in Ilala District, Dar es Salaam, Tanzania. **Methodology:** Qualitative case study approach to explore the factors influencing the use of modern contraceptive methods among women living with HIV (WLHIV). Data were collected from 15 participants through in-depth interviews, allowing for rich, detailed insights into their experiences and perspectives. The data were analyzed using a thematic analysis process to identify key patterns and emerging themes related to contraceptive use within this population. **Results:** This study identified three key themes influencing contraceptive use among women living with HIV (WLHIV). First, perceptions towards contraceptives revealed both positive views such as health benefits, improved ART adherence, and joint decision-making and concerns like side effects, infertility fears, community rumors, and cultural or religious barriers. Second, subjective norms played a significant role, with partners, peers, community stigma, and the lack of open family discussions strongly shaping women's choices. Lastly, perceived selfefficacy showed that while some women made independent decisions motivated by health or parenthood goals, others struggled with low confidence, past trauma, and fears driven by myths and misinformation. Overall, contraceptive use among WLHIV is influenced by a complex mix of personal beliefs, social pressures, and individual confidence. **Conclusion:** Contraceptive use among WLHIV is shaped by personal perceptions, social pressures, and self-efficacy, rather than just access or knowledge. Addressing cultural stigma, partner influence, misinformation, and emotional barriers through psychosocial support, community education, and male partner involvement is essential to empower women to make informed reproductive choices

373. Njuraki, E. J. (2025). Assessing age vulnerability, trends, and association between Malaria incidence with temperature, precipitation, and relative humidity variability in Kilimanjaro, Songwe, Tanga, and Kagera, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malaria remains a major global health concern, with cases rising from 244 million in 2021 to 249 million in 2022, primarily in the WHO African Region. According to climate change

projections, an additional 1.6 million people in East Africa will be at risk of contracting malaria by 2030, and by 2050, that number will rise to 1.8 million. Children under five are particularly vulnerable to severe malaria outcomes due to their lower immunity and physiological factors. These projections highlight the need to comprehend and address how climate variability affects malaria incidence across all malaria epidemiological strata. **Objectives:** To assess the age vulnerability, trend, and association of Temperature, precipitation and relative humidity effects on malaria incidence in Kilimanjaro, Songwe, Tanga and Kagera regions from 2021 to 2024. **Methods and Materials:** The study uses an ecological design, selecting 23 councils through stratified sampling based on malaria transmission risk across four regions. Malaria incidence data were obtained from the National Malaria Control Program, while climate parameters were sourced from the Tanzania Meteorological Authority. Linear regression to answer the first objective by relating age specific annual malaria incidence with climate parameters. Time series analysis and decomposed additive time series identified trends and seasonality in climate variables and malaria incidence for the second objective, and multiple linear regression addressed the third objective, whereby the total annual malaria incidence was related to climate parameters. **Results:** Malaria incidence varied notably across councils, with Ngara DC and Kilindi DC showing the highest median rates (254.4 and 128.2 per 1,000 population, respectively), while Moshi MC and Siha DC recorded the lowest. Individuals with ≥ 5 years showed significant vulnerability, particularly in high-incidence councils. A significant negative association was observed between malaria incidence and average maximum temperature in under-fives ($\beta = -0.1$, $p = 0.001$), while minimum temperature and humidity showed strong positive associations in older age groups ($\beta = 0.24$ and $\beta = 0.06$, both $p < 0.05$). Time series decomposition revealed strong seasonal trends, with peaks during the wet season (March–May). In multivariable analysis, minimum temperature and relative humidity remained significant predictors of annual malaria incidence suggests that the model accounts for roughly 4% of the variability in malaria incidence, implying that other non-climatic factors likely play important roles in malaria dynamics (adjusted $R^2 = 0.039$). **Conclusion:** People aged ≥5years are more vulnerable to malaria due to climate variability as compared to those aged < 5 years. Seasons of the year, particularly wet seasons (March to May), contribute to a much higher trend of malaria incidence. Average minimum Temperature and Average Relative humidity are the strong predictors of malaria due to climate, although their likelihood is very weak.

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374. Nkunda, E.E. (2025). Evaluation of the Internal Quality Control Practices Among Medical Laboratories in Kigamboni Municipality, Dar es Salaam, Based on ISO 15189:2022 Standards. Muhimbili University of Health and Allied Sciences

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Abstract

Background: ISO 15189:2022 highlights the importance of internal quality control (IQC) in ensuring accurate and reliable laboratory results. It requires laboratories to regularly check their testing processes, record findings, and take corrective actions when problems are detected. The standard also encourages a risk-based approach, linking the level of quality control to the potential impact on patient safety. This study investigates the level of compliance with internal quality control procedures, the documentation practices, awareness of ISO 15189:2022 among laboratory practitioners, and the factors influencing its implementation in medical laboratories in Kigamboni

municipality. **Objective:** This study aimed to explore how the internal quality control practices are implemented in medical laboratories in Kigamboni municipality based on ISO 15189:2022. **Methodology:** A qualitative case study design was conducted in seven laboratories located within health facilities and hospitals in Kigamboni Municipality to evaluate the process of internal quality control. Purposeful sampling was utilized to select information-rich participants, including quality officers and laboratory practitioners, with a sample size of 13 participants. Data were collected using 7 in-depth interview guides and 6 key informant interview guides, and were analyzed using a deductive thematic analysis approach and NVivo 12 software, organizing findings into themes and sub-themes. **Findings:** The study found moderate compliance with IQC procedures and inconsistencies in documentation practices. Awareness of ISO 15189:2022 was generally high, but formal training was limited to a few quality officers. Major barriers to effective ISO implementation included limited resources, inadequate management support, and challenges with laboratory information systems, leading to compromised quality assurance. **Conclusion:** While laboratory staff demonstrated awareness and some adherence to quality standards, significant gaps remain in resource availability, training and institutional support, which impede full implementation of ISO 15189:2022 and optimal laboratory performance. Recommendations: Strengthening capacity through structured training programs, improving infrastructure and resource allocation and fostering stronger management commitment are essential to enhance compliance with ISO 15189:2022 and improve diagnostic quality in Kigamboni laboratories

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375. Ntine, A.Z. (2025). Survival of cervical cancer patients and associated factors at Ocean Road Cancer Institute, Dar es Salaam. Muhimbili university of health and Allied Sciences.3

Abstract

Background: In Tanzania, cervical cancer has high incidences and mortality rates among women, despite being a preventable disease when detected early and through Human papillomavirus (HPV) vaccination. Access to treatments such as chemotherapy, surgery, and radiation therapy is pivotal in the survivorship of cervical cancer. There is limited information on the current estimates of survival and its determinants. **Aim:** To estimate the 3-year survival rate of cervical cancer and associated factors among patients who underwent treatment at Ocean Road Cancer Institute from January to December 2021. **Materials and methods:** The study was a retrospective cohort design. A total of 995 cervical cancer patients who received and completed treatment from January to December 2021 were followed for three years until December 2024. Data was extracted from the Ocean Road Cancer Institute database into a Microsoft Excel spreadsheet. Kaplan-Meier survival curves were constructed to assess overall survival across a 3-year study period, while the log-rank test was employed to evaluate differences in survival distributions among the independent variables. The Cox regression model was used to identify the influence of each covariate on survival. Results: The 3-year survival rate was 85.4% (95% CI= 82.3%-88.0%). The median age was 52 years. Advanced cancer stage IV (adjusted hazard ratio (aHR)= 3.86, 95%, CI; 3.60-4.14), severe anemia (aHR=1.95,95%, CI; 1.49 – 2.54), receiving radiotherapy alone (aHR=1.52, 95%, CI; 1.26-1.84) and being a dependant (aHR=1.51, 95%, CI; 1.04-2.21) were associated with

increased risk of death. Age, marital status, comorbidities, HIV status, and cancer type did not show statistically significant associations. **Conclusion and recommendations:** The 3-year survival rate was high. Stage of cancer at diagnosis, choice of treatment modality, being a dependant, and level of hemoglobin were significant predictors of poor survival. Strengthening comprehensive cancer care treatment focusing on early diagnosis and timely access to multi-modality therapies.

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376. Ntissi, H.H. (2025). Identifying Barriers, Facilitators, and Strategies for Adopting Multiple First-Line Artemisinin Combination Therapies for Management of Uncomplicated Malaria in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malaria remains one of the most significant global health challenges, accounting for 3% of cases and 4.1% of deaths worldwide in 2020. In Tanzania, Plasmodium falciparum is the primary cause, responsible for 96% of malaria cases, with children under five years being the most vulnerable group. The emergence of partial resistance to artemisinin derivatives—notably in Southeast Asia and more recently in Rwanda and Uganda—has raised serious concerns about the effectiveness of current treatment strategies. A molecular surveillance study conducted in Tanzania has identified the presence of the kelch13 mutation, which is associated with artemisinin resistance. Despite the WHO endorsing malaria vaccines such as RTS,S/AS01 and R21/Matrix-M, these offer only partial efficacy—ranging from 30% to 50% for RTS,S/AS01 and 75% to 80% for R21/Matrix-M against clinical malaria in children—with protection waning over 1 to 4 years without boosters. To combat the potential spread of resistance, the World Health Organization (WHO) has recommended adjusting malaria control strategies, such as optimizing the use of existing artemisinin-based combination therapies (ACTs) and considering the simultaneous use of multiple first-line therapies (MFT). MFT, a strategy that involves offering several treatment options to clinicians, could help slow resistance by reducing selective pressure on any single drug. This study investigated the barriers and facilitators to adopting MFT, considering factors like healthcare infrastructure, supply chain issues, and provider or patient preferences, while exploring how such a strategy could improve malaria care in resource-limited settings. **Objectives:** The objectives of the study were to identify barriers, facilitators, and strategies for adopting multiple first-line artemisinin combination therapy for the management of uncomplicated malaria in Tanzania**. Methods and materials:** The study employed a multi-method qualitative study design, which included a desk review and qualitative interviews. The interviews involved in-depth interviews (IDIs) and key informant interviews (KIIs) among key stakeholders who play a part in malaria prevention, control, and treatment. Interviews were recorded virtually using Zoom software and transcribed, and then thematically analyzed using coding supported by NVivo software. **Results:** Six themes emerged, which are cost and financial barriers, knowledge and training gaps, supply chain and logistics barriers, government and stakeholder commitments, training and capacity building, and data-driven decision making. All these themes answered the research questions on barriers, facilitators, and strategies for adopting MFT in the management of uncomplicated malaria in Tanzania. **Conclusion:** Despite being a promising strategy, this study highlights the difficulties in adopting the MFT strategy in the management of uncomplicated

Malaria in Tanzania and also combating resistance. Its implementation is hindered by financial, logistical, and knowledge-related challenges. Strong political support and stakeholder collaboration offer a pathway for success.Therefore, efforts must focus on improving supply systems, training providers, and securing sustainable funding. **Recommendations:** To support the adoption of Multiple First-Line Therapies (MFT) in Tanzania, the study recommends revising national treatment guidelines to incorporate multiple ACTs with clear segmentation strategies, enhancing healthcare provider capacity through continuous training on alternative therapies, and strengthening supply chain systems to ensure consistent availability across public and private sectors. Additionally, it advocates for regular therapeutic efficacy studies and robust pharmacovigilance to guide data-driven decisions, while emphasizing the need for cost-effectiveness analyses and sustainable financing mechanisms through donor engagement and innovative funding approaches. ***Key words:*** *Multiple First-Line Therapies; Artemisinin resistance; Malaria control strategies; Health system barriers; Plasmodium falciparum; Qualitative thematic analysis*

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377. Nyachumah, R.C. (2025). Perceptions and Experiences of Youths on sexual and Reproductive Health Services at Vijibweni hospital: A case of Kigamboni Municipality, Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Sexual and reproductive health services (SRHS) are a critical aspect of adolescents' growth and development, safeguarded by sexual and reproductive health rights that uphold equality and dignity. However, Tanzanian youth continue to experience challenges in accessing and utilizing these rights, leaving them vulnerable to issues such as early pregnancies, sexually transmitted infections (STIs), HIV/AIDS, and other related health concerns. **Objectives:** To explore the perceptions and experiences of youths on sexual and reproductive health services at Vijibweni Hospital in Kigamboni Municipality, Dar es Salaam. **Methodology:** A qualitative case study design was employed. A total of 20 participants were selected through purposively to participate in the study. Data were collected through in-depth interviews. Thematic data analysis was used to analyze data. **Findings:** Youth acknowledged the value of SRH services for their health and future planning but encountered barriers, including stigma, judgment, limited privacy, and gender imbalance in service delivery. Experiences at Vijibweni Hospital varied. Positive provider attitudes encouraged some, while long queues, lack of clear guidance, and shared spaces deterred others. To enhance service uptake, youth recommended integrating SRH education in schools, using youth-friendly media, involving parents, and establishing dedicated adolescent spaces within health facilities. **Conclusion and Recommendation:** Although youth understand the importance of SRH services, access remains limited due to social and structural barriers. Addressing these challenges, Vijibweni Hospital requires creating private, youth-focused service areas with trained staff, embedding SRH education into school programs, engaging families through targeted outreach, and promoting inclusive, stigma-free messaging through media and national campaigns, particularly in growing urban areas like Kigamboni.

378. Nyambarino, J.J. (2025). Chronic **osteomyelitis: causative organisms and their antimicrobial sensitivity pattern in children treated at Muhimbili Orthopaedic Institute. Muhimbili University of Health and Allied Sciences.**

Abstract

Background: Chronic osteomyelitis (COM) is a persistent bone infection caused by microorganisms that gain access to bone tissue. It is often difficult to treat and, if not managed effectively, can lead to significant morbidity and increased burden on both patients and the healthcare system. The challenge is further compounded by the emergence of antibiotic-resistant pathogens, which complicates treatment and limits therapeutic options. **Objective:** To determine the causative organisms involved in chronic osteomyelitis in children and their antimicrobial sensitivity pattern. **Methods:** A cross-sectional study was conducted at Muhimbili Orthopaedic Institute (MOI) involving 26 children with chronic osteomyelitis admitted for surgery between July and December 2024. During the operation, three tissue samples (bone marrow, bone, and periosteum) were aseptically collected from the infection site and placed in brain heart infusion broth to enhance bacterial yield. Samples were delivered to the MUHAS Microbiology Laboratory within one hour, incubated for six hours, and then cultured on selective media. Identified organisms underwent biochemical testing and antibiotic susceptibility testing based on the Tanzania National Treatment Guidelines and commonly used antibiotics at MOI. **Results:** Twenty-six children with chronic osteomyelitis (mean age 10.2 ± 3.2 years) were enrolled, with most being male. Over half were aged 10 and above. Comorbidities were uncommon; 76.9% had none, while 11.5% had sickle cell disease and another 11.5% had malnutrition. The femur (42.3%) and tibia/fibula (34.6%) were the most affected bones. Staphylococcus aureus was the predominant pathogen. Among 14 isolates tested, all were 100% susceptible to vancomycin. Susceptibility to ciprofloxacin and gentamicin was 64.3%. Resistance was highest to penicillin G (100%), cefoxitin (82.4%), and oxacillin (80%). **Conclusion:** Chronic osteomyelitis in children is a persistent challenge in low-resource settings, often linked to Staphylococcus aureus with rising antibiotic resistance. Vancomycin remains effective, followed by ciprofloxacin and gentamicin. Socioeconomic factors, delayed care, and complications highlight the need for improved early diagnosis and targeted treatment

379. Nyanda, S. E. (2025). Knowledge, practice and associated factors regarding safe use of unfractionated heparin among nurses in selected chronic hemodialysis centers in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstracts

Background: Chronic hemodialysis for patients with end-stage renal disease (ESRD) needs a patent extracorporeal circuit (ECC), which is maintained by the administration of anticoagulants like unfractionated heparin (UFH). Knowledge and practice regarding safe use of anticoagulants during hemodialysis among nurses in Dar es Salaam is not documented. That is why it is crucial to determine the knowledge, practice, and factors associated with the safe use of UFH among nurses in the hemodialysis unit. **Objectives:** To determine the knowledge, practices, and factors associated with the safe use of unfractionated heparin (UFH) for chronic hemodialysis patients

among nurses working in selected hemodialysis units in Dar es Salaam, Tanzania Materials and methods: This was a hospital-based cross-sectional study which employed a quantitative approach using a self-administered questionnaire to nurses working in hemodialysis centers in Dar es Salaam, Tanzania. A total of 139 participants were chosen through a convenient sampling technique. Data were analyzed using SPSS version 25, and a statistical significance level of P<0.05 was considered significant. **Results:** A total of 139 nurses participated in the study. The participants ranged in age from 20 to 58 years, with a mean age of 33.2 6.2 years. The sample included 77 (55.4%) male nurses and 62 (44.6%) female nurses. The study found that 56.1% of nurses demonstrated adequate knowledge, while 59% exhibited good practices in administering unfractionated heparin for chronic hemodialysis patients. The odds of respondents with three or more years of working experience having good knowledge were 7.9 times higher than those with two or fewer years of experience in the HD unit (AOR = 7.876, 95% CI: 2.075 29.895, P = 0.002). Respondents with a Master's degree (85%) showed a good level of knowledge compared to those with other levels of education (P = 0.019). The odds of delivering good practice with three or more years of working experience in the HD unit were 2.1 times higher than for respondents with less than three years of experience (OR = 2.063, 95% CI: 1.018 4.183, p= 0.045). Additionally, respondents who attend on job training on the pharmacology of UFH were 2.1 times more likely to have good practice than those without such training (OR = 2.080, 95% CI: 1.036 4.176, P= 0.040). **Conclusion:** The study found that nurses working in selected hemodialysis centers demonstrated an average level of knowledge and practice, at 56.1% and 59%, respectively. Factors associated with knowledge include the participants' level of education, while factors associated with practice were years of experience in the HD unit, on job training on the pharmacology of UFH, and access to the HD guidelines for the administration of unfractionated heparin. **Recommendations:** Strengthening in-service training programs, ensuring the availability of clear and accessible guidelines, and encouraging staff to pursue further education will improve nurses' knowledge and practice. This will result in improved quality of care provided to hemodialysis patients.

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380. Nyange, E. R. (2025). Pre-eclampsia knowledge among pregnant women in Kinondoni Municipality, Dar es salaam Region, Tanzania. Muhimbili university of health and Allied Science.

Abstract

Background: Pre-eclampsia (PE) is a leading cause of maternal morbidity and mortality, especially in Africa and Tanzania, where inadequate knowledge of its risk factors and complications delays health care-seeking behavior among pregnant women**. Objective:** This study aimed to assess the knowledge level of pre-eclampsia among pregnant women in Kinondoni District, Dar es Salaam Region, Tanzania. Methodology: This was a cross-sectional study which was conducted in Kinondoni, with a sample of 426 pregnant women selected randomly. Data was collected using questionnaire and analyzed using SPSS software. Descriptive statistic was used to summarize and interpret the data. Results: Almost half of the pregnant women 192(45.1%) and those who attend ANC in the study recognized severe headache as a sign of pre-eclampsia, while fewer identified high blood pressure 94(22.1%) However, most participants 269 (63.1%) known that having pre-eclampsia in a past pregnancy is a major risk factor, but knowledge about other

risks like high blood pressure, diabetes, obesity, and multiple pregnancies was very low. While many women 284(66.6%) understood that pre-eclampsia can lead to death knowledge of other serious complications such as eclampsia 89(20.9%) stroke 5(1.2%) and postpartum hemorrhage was very low. The data shows that these complications were rarely recognized, suggesting a major knowledge gap that needs to be addressed. Conclusion: PE knowledge level of signs and symptoms is low. Also, PE risk factors and PE complications are not well known. I recommend the health care providers to continue raising pre-eclampsia knowledge among women during antenatal health education

381. Nyange, I.P. (2025). Clinical profile, treatment patterns, and outcomes of nasopharyngeal cancer patients treated in the 3dcrt era at ocean road cancer institute between January 2018 to December 2021. Muhimbili University of Health and Allied Sciences.3

Abstract

Nasopharyngeal carcinoma (NPC) is unusual and has a very distinct global distribution pattern, accounting for only 0.6% and 0.75% of all new and cancer deaths in the world, respectively. It is endemic to North Africa, Southeast Asia, and southern China. In Sub-Saharan Africa (SSA), NPC accounts for 0.8%, while in Tanzania, it accounts for about 0.77% of all new cancers. Studies in SSA show that the most common histology is undifferentiated carcinoma, and the least common is differentiated nonkeratinizing squamous cell carcinoma. The majority of individuals present with an advanced stage of the illness (Stage IV), necessitating the use of chemotherapy as a neoadjuvant, adjuvant, or concomitant treatment with radiation therapy. 3-Dimensional conformal radiotherapy (3DCRT) is predominantly used in all stages of disease, but when paired with chemotherapy, it improves overall survival. In Tanzania, data on NPC patients treated in the 3DCRT era are lacking concerning the disease characteristics, management treatment patterns, and overall survival, despite the reported more cases with advanced stage at diagnosis. This study aims to determine the clinical profile, treatment patterns, and three-year overall survival of NPC patients treated in the 3-DCRT era at Ocean Road Cancer Institute (ORCI) in Tanzania. **Methodology:** This was a retrospective hospital-based cohort study of NPC patients treated with 3DCRT at ORCI from January 2018 to December 2021 who met the inclusion criteria. The dependent variable was three-year OS, while the independent variables were social demographics, clinical profile, and treatment modalities. SPSS version 27 was used for analysis and visualization of the data. Percentages were used to describe qualitative factors, whereas means and standard deviations were used to describe quantitative data. The Kaplan-Meier method was used to create survival curves. The variables were evaluated in univariate analysis using the log-rank test to determine predictors of survival. A Cox regression model was used to examine factors that were significant in univariate analysis. A p-value of less than 5% was considered statistically significant. **Results**: Among 93 patients studied, the mean age was 48.23(±16.94) years, with a majority (51.6%) being age group of less than 50 years old. The highest incidence was in the 5th and 6th decades. Of all patients, 69.9% were men and 30.1% were women, with a sex ratio of 2.3 (Male/Female). Undifferentiated nasopharyngeal carcinomas were the most common histological type, affecting 61.3% of patients. At diagnosis, the majority of patients (88.2%) had an advanced stage of NPC (III-IVA). Patients

received radiotherapy combined with chemotherapy were 85%. Among these patients, 61% had induction chemotherapy followed by RT, while 30.3% had induction chemotherapy followed by concurrent chemoradiotherapy. Radiotherapy dose, EQD2 of ≥66 Gy was delivered to the majority of patients (73.1%). In this study, with a median follow-up of 43 months, the three-year overall survival rate was 56%. Performance status (ECOG) was a significant prognostic factor concerning overall survival of the whole cohort, with the worst prognosis in patients with an ECOG scale of 2 compared to an ECOG scale of 0-1 ($P < 0.017$). In the locoregionally advanced NPC (Stage IVA) cohort, only induction chemotherapy followed by RT alone or concurrent chemoradiotherapy and the radiotherapy dose EQD2 of ≥66 Gy were the factors associated with significantly improved survival compared with no induction chemotherapy and radiotherapy dose EQD2 of <66 Gy ($P=0.02$ and $P=0.01$, respectively). **Conclusion**: This baseline study in our 3DCRT cohort was characterized by predominantly advanced-stage disease (88.2%). Three-year overall survival was 56%. Poor performance status (ECOG scale of 2) was an independent predictor of poor three-year overall survival. In the locally advanced NPC (stage IVA) cohort, the addition of IC to RT or CCRT and a radiotherapy dose EQD2 of more than or equal to 66 Gy demonstrated an overall survival benefit. Toxicity data were available for 30 patients; in this subgroup, tinnitus was the most frequent late toxicity (63.3%), followed by dental caries (57.7%) and xerostomia (50%), highlighting the significant burden of treatment-related side effects among nasopharyngeal cancer patients.

382. Nyondo, H. C. (2025). Incidence and severity of acute radiation esophagitis and its relation to radiotherapy fractionation among women with breast cancer at Ocean Road Cancer Institute, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: For patients with breast cancer undergoing chest wall and supraclavicular radiation therapy, acute radiation esophagitis is a frequent side effect. There is little information on this side effect among breast cancer patients in low-resource environments. **Aim of study:** To compare the incidence and severity of acute radiation esophagitis in breast cancer patients receiving conventional versus hypofractionated three-dimensional conformal radiotherapy at Ocean Road Cancer Institute, and to identify associated predictors. **Methods and materials:** This prospective, double-arm, and single-blinded study in which patients were sequentially assigned to receive a dose of 50 Gy in 25 fractions or 40–42.5 Gy in 15–16 fractions to the chest wall and SCF based on clinical decisions. It included all eligible adult breast cancer patients receiving radiotherapy at Ocean Road Cancer Institute for up to six weeks, with weekly evaluation of esophagitis during and after treatment. The severity was assessed using the Radiation Therapy Oncology Group (RTOG) criteria. Data were analyzed based on distribution: means with t-tests, medians with Mann–Whitney U tests, and proportions for categorical variables. The longitudinal effects of radiotherapy were assessed using the nparLD R package in RStudio, and predictors of esophagitis were identified through univariate logistic regression, forward conditional multivariate regression, and ROC analyses. Significance was set at $p < 0.05$. **Results:** Out of 82 patients, 32.9% developed acute radiation esophagitis (ARE), with similar rates in the conventional (31.7%) and hypofractionated (34.1%) groups ($p = 0.72$). Most cases were of low grade, and no Grade 3 or

higher events were observed. Grade 1A occurred in 16% of patients, Grade 1B in 13%, and Grade 2 in 4%. Weekly assessments (n = 492) revealed ARE in 13.6% of events, primarily Grade 1A (7.7%). The incidence of Grade ≥1B ARE was not significantly different between regimens (12.6% vs. 14.6%). In our univariate logistic analysis, the absence of hypertension was associated with a 65% reduction in the risk of Grade 2 or higher ARE (p = 0.03). Dmax, Dmean, esophageal length in the field, V10, and V20 were significantly associated with increased risk (all p

383. Nyoni, M. M. (2025). Streptococcus agalactiae colonization and antimicrobial susceptibility among pregnant women at Mwananyamala Regional Referral Hospital, Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences (MUHAS).

Abstract

Background: Streptococcus agalactiae (group B streptococcus, GBS) is a leading cause of neonatal pneumonia, meningitis, and sepsis. Maternal rectovaginal colonization is a major risk factor for early-onset neonatal infection. Updated local data on prevalence and antimicrobial susceptibility are essential for guiding prevention strategies in Tanzania. **Methods:** A hospital-based cross-sectional study was conducted among 155 pregnant women at 36–37 weeks' gestation attending Mwananyamala Regional Referral Hospital, Dar es Salaam. Vaginal and rectal swabs were cultured, and GBS was confirmed by standard microbiological tests. Antimicrobial susceptibility was determined using the Kirby–Bauer disk diffusion method. Data were analyzed in SPSS version 27 using chi-square tests and logistic regression. **Results:** The prevalence of maternal GBS colonization was 30.3% (47/155). Colonization was more frequent in the vagina (32.7%) than in the rectum (28.1%), with 21.3% showing dual-site colonization. GBS isolates were highly susceptible to vancomycin (83.6%) and clindamycin (81.9%) but showed low susceptibility to penicillin (11.5%) and erythromycin (11.5%). A history of dysuria was associated with colonization in univariate analysis (cOR 2.58, 95% CI 1.17–5.67, p = 0.018) but was not significant in multivariate analysis. **Conclusion:** A high prevalence of maternal GBS colonization and notable resistance to penicillin and erythromycin were observed. These findings highlight the urgent need for routine GBS screening, continuous antimicrobial resistance surveillance, and strengthened prevention strategies in Tanzanian antenatal care services. Ethical approval was obtained from the Muhimbili University of Health and Allied Sciences Institutional Review Board.
Keywords: Group B streptococcus; maternal colonization; antimicrobial susceptibility; neonatal sepsis; Tanzania.

384. Omar, F.M. (2025). Nurses' Awareness and Implementation Challenges of Clinical Nutrition Recommended Practices for Critically Ill Patients at Muhimbili National Hospital, Dar Es Salaam, Tanzania, Muhimbili university of health and Allied Sciences.

Abstract

Background: Nutritional supervision has an important role in enhancing the outcomes for critically sick patients admitted to intensive care units. Nurses are critical to ensuring that patients' dietary needs are satisfied; nevertheless, challenges such as limited resources and poor training might impede successful care. Despite the vital necessity of this part of treatment, there is less

evidence on nurses' awareness of clinical nutrition recommended practices for critically ill patients in Tanzania. **Broad objective:** The purpose of this study was to assess nurses' awareness and implementation challenges of clinical nutrition recommended practices for critically sick patients in the ICU of the Muhimbili National Hospital in Dar es Salaam, Tanzania. **Methods:** An analytical cross-sectional study with a quantitative methodology was undertaken at Muhimbili National Hospital (MNH), Tanzania's largest tertiary care facility. Simple random sampling was used to recruit 121 ICU nurses from various ICUs in Muhimbili. Data was collected using a standardized questionnaire. Descriptive data summarized nurses' demographic and professional characteristics. Bivariate and multivariable modified Poisson regression analyses were used to identify characteristics associated with nurses' awareness of and challenges in implementing clinical nutrition recommendations and management strategies to meet the nutritional needs of critically ill patients. **Results:** Only 22 of the 121 nurses (18.0%) showed adequate awareness of recommended nutrition practices. The massive majority of respondents indicated the following perceived challenges: 78 (64.5%) reported insufficient training, 82 (67.8%) lack of awareness of existing nutrition guidelines, 63 (52.1%) insufficient resources, 64 (52.9%) time restrictions, and 73 (60.3%) severe workloads. Single nurses (aPR 1.20; 95% CI 1.15-1.33; p = 0.002). Higher (aPR 1.60; 95% CI 1.30-1.97; p = 0.001). And nurse specialists (aPR 1.10; 95% CI 1.02-1.35; p = 0.05) were significantly associated with adequate awareness. **Conclusion:** This study found low awareness among nurses on the recommended clinical nutrition guideline practices due to inadequate pre- and in-service training, limited dissemination and localization of guidelines, insufficient resources and staffing, time constraints, and heavy workloads. Nurses' awareness and implementation challenges regarding recommended nutrition practices are associated with age, marital status, education level, and nursing function in intensive care units.

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385. Omar, M.F. (2025). Pathway to Emergency care and factors associated with delayed presentation among paediatric patients with aerodigestive foreign bodies at the Emergency Department of Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Children with aerodigestive foreign bodies commonly present at the Emergency Department. Morbidity and mortality are potentially increased by delays to definitive emergency care. However, the factors that are associated with delayed presentation have not been well studied in Sub-Saharan Africa. **Objective:** To describe the pathway and determine the factors associated with time to presentation among pediatric patients with aerodigestive foreign bodies presenting to the Emergency Medicine Department of Muhimbili National Hospital **Methodology:** A hospital-based cross-sectional study was conducted for 3 months from March 2025 to May 2025 at the Pediatric Emergency Medicine Department of Muhimbili National Hospital. Patients with verified aerodigestive foreign bodies aged 28 days to 14 years were consecutively enrolled into the study. Delayed presentation was defined as arrival at MNH more than 24 hours after the incident or symptom onset. Data regarding demographics, referral patterns, the timing of presentation, and factors associated with time to presentation were collected using a pre-tested structured questionnaire. Data analysis was done using SPSS version 27. Descriptive statistics, were used to

summarize the data. Comparison of categorical variables was performed using chi-square or Fisher's exact test, where appropriate. Association between delayed presentation and the independent variables was done using a modified Poison Regression Model with univariate and multivariate analysis. A p-value of <0.05 was considered significant for the association between the independent factors and delayed presentation. **Results:** In total 150 patients aged 28 days to 14 years were enrolled. The median age was 3 years (IQR: 2-5), 127(82.7%) were 5 years or younger. Two-thirds were male and only 48(32.0%) had health insurance. 101(67.3%) were referred from another health facility, and 60(40%) had visited two or more facilities before arrival to the Emergency Department. The median time from incident or symptom onset to hospital presentation was 24 hours (IQR:8.8-28.0). 75(50%) of the patients had a delayed presentation (>24 hours). Independent factors significantly associated with delayed presentation included referred patients (aPR=1.52, 95% CI: 1.03–2.24). Visiting 2 or more facilities before arrival (aPR: 3.18, 95% CI: 2.26–4.48), Initially seeking care at lower level health facility (aPR =1.62, 95% CI: 1.03-2.56). and health insurance status (aPR = 5.03, 95% CI: 2.77-5.89). **Conclusion:** Half of pediatric patients with aerodigestive foreign bodies t late (>24hrs) to the emergency department of tertiary hospital. Most of them are referred, with most visiting a lower-level health facility before arrival to the Emergency Department of Muhimbili National Hospital. Delayed presentation was independently associated with: not having health insurance, being referred from another facility, visiting 2 or more facilities and finally visiting a health center or dispensary as an initial facility to seek care.

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386. Omari, H. S. (2025).Potential drug-drug interaction, treatment outcomes and associated factors among children with epilepsy attending the neurology clinic at Muhimbili national hospital, Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Epilepsy is one of the most prevalent neurological disorders in the pediatric population, necessitating effective management strategies to control seizures and optimize quality of life. Antiepileptic drugs (AEDs) are the mainstay of epilepsy treatment, but in children with comorbid conditions requiring additional medications, the complexity of therapy increases the risk of potential drug–drug interactions (pDDIs). These interactions may lead to altered therapeutic efficacy (suboptimal seizure control) and increased risk of adverse events (AEs), yet evidence among children with epilepsy in sub-Saharan Africa is limited. This study assessed the prevalence of pDDI among children undergoing treatment for epilepsy and its influences on seizure control and safety while exploring the factors associated with interactions. **Aim of the study:** To investigate the prevalence of pDDI, treatment outcomes and associated factors among children with epilepsy. **Methodology:** This analytical cross-sectional study was conducted at Muhimbili National Hospital, Dar es Salaam, and recruited 315 children under 15 years of age who had been diagnosed with epilepsy and were on medication for over 6 months. Data were extracted from medical records (JEEVA system) using a structured tool that captured socio-demographic information and clinical information such as type of epilepsy, comorbid conditions, neurological status, AEDs and non-AEDs prescribed, seizure episodes in the past 6 months and reported AEs. A

list of prescribed AEDs and non-AEDs for the patient was assessed for pDDIs using the Lexicomp Drug Interaction Checker to determine the presence and nature of these interactions. In this study, any recorded symptom reported by the parent/guardian/patient after drug administration was considered an AE. Seizure control was defined as a seizure-free status for a patient for the past six months. pDDIs were identified using the Lexicomp® Drug Interaction Checker, categorized by severity (A–X). Data were managed in Microsoft Excel and analyzed using SPSS version 27. Prevalence of pDDIs was estimated with proportions and 95% confidence intervals. Association between pDDIs and clinical outcomes (seizure control and AEs) were tested using chi-square or Fisher's exact test and independent factors were determined through multivariable Poisson regression with p-value <0.05 considered statistically significant. **Results:** The prevalence of pDDIs was 30.2%. Most interactions identified were moderate interactions (risk rating C) which require monitoring of therapy. Factors significantly associated with pDDIs included the presence of comorbidities, type of epilepsy specifically the combined type and neurological status of the patient (developmental delay). Only 44.2% of the patients achieved seizure control. Although not statistically significant in the adjusted analysis, the presence of pDDIs showed a trend toward poor seizure control (p = 0.075), suggesting that pDDIs may still play a role in the management of epilepsy, particularly among patients with moderate or major interactions. AEs observed included loss of vision and headache reported in 1.6% of participants. Although AEs were more common in those with potential drug-drug interactions (pDDIs), no statistically significant associations were identified due to the low number of reported events. **Conclusion:** pDDIs are common in pediatric epilepsy patients at MNH (30.2%) and are associated with poor seizure control (31.5% vs 49.5%). Comorbidities, combined epilepsy type and developmental delay, significantly increased the likelihood of pDDIs. AEs were rare (1.6%), with headache and loss of vision being the only events recorded. Clinicians should be aware of these interactions and adopt preventive strategies such as routine screening for drug interactions using various tools, such as Lexicomp® Drug Interactions Checker, minimizing polypharmacy where possible and integrating therapeutic drug monitoring into routine care.

387. Omari, M. (2025). Pneumatization patterns of sphenoid sinus and arrangement of adjacent neurovascular structures: a computed tomography study at Muhimbili national hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The rising incidence of chronic diseases affecting the paranasal sinuses and skull base has led to a growing demand for endoscopic procedures, including Endoscopic Sinus Surgery (ESS) and Trans nasal Transsphenoidal Endoscopic Surgery (TTES).These procedures require a thorough understanding of the variant anatomy of sphenoid sinus and its relationship with adjacent neurovascular structures including internal carotid artery and optic nerve since these structures have risk of iatrogenic injury that could lead to serious complications like hemorrhage or permanent blindness.**Objectives:**This research aimed to determine the patterns of sphenoid sinus pneumatization and associated arrangement of adjacent neurovascular structures among patients who underwent paranasal sinus computed tomography at Muhimbili National Hospital (MNH) between October 2022 and November 2024.**Methodology:**A retrospective cross-sectional

hospital-based study was conducted at MNH involving 250 PNS CT images of patients aged at least 18 years who were attended at the radiology department between October 2022 and November 2024. A structured checklist developed by Principal investigator was used to record the patterns of pneumatization and the arrangement of neurovascular structures. CT images were read by the PI and a senior Radiologist. Data was analyzed using SPSS Version 25, with the chi-square test applied to assess significance at a p-value threshold of < 0.05. **Results:** The study involved 135 men and 115 women with a mean age of 42.1 ± 12.5 years. Postsellar pneumatization was most common (48.4%) and conchal type was the least (0.4%). Extended pneumatization was most frequently seen in the greater wing of the sphenoid (52.4%) and least in anterior clinoid process (22.8%). Protrusion of the optic nerve and internal carotid artery was more common than their dehiscence's. Significant associations were found between pneumatization type with ICA and ON protrusions ($p<0.001$) and between types of SS pneumatization with ON dehiscence ($p= 0.025$). Also, there was significant associations between greater wing of sphenoid, anterior clinoid process and pterygoid process pneumatization with ICA protrusion. ($p<0.05$). **Conclusion:** The postsellar and sellar were the commonest types of pneumatization whilst the greater wing of sphenoid pneumatization was the most common extent of pneumatization. ICA and ON protrusion are significantly associated with the type of sphenoid sinus. All extents of pneumatization were significantly associated with ICA protrusion. **Recommendation:** Given the high incidence of anatomical variations in the sphenoid sinus, preoperative CT scans are recommended for all patients undergoing ESS or TTES to identify risky variations and prevent or minimize operative complications.

388. Omondi, G. (2025). Capacity to implement the world health organization's guidelines for essential trauma care: A cross–sectional study of health care providers in district hospitals in Mwanza city. Muhimbili University of Health and Allied Sciences.

Abstract

Over 90% of injury-related deaths occur in Low- and Middle-income countries, with road trauma making a significant contribution towards total trauma cases. Lower health care facilities are responsible for providing initial management of trauma patients; however, the capacity of these hospitals to provide initial management has not been well evaluated in the context of Tanzania. **Objectives:** The study aimed to assess the capacity of healthcare providers in lower–level hospitals to implement the World Health Organization's guidelines for trauma care in district hospitals in Mwanza city, Tanzania. **Methods:** This was a descriptive cross-sectional study that was conducted in two district hospitals in Mwanza city. A total of 135 doctors and nurses working and had previously worked at the emergency unit of the hospitals were included in the study. A convenient sampling method was used to assess the study participants. Self-administered checklists and questionnaires were used to assess the availability of resources and healthcare providers' reported skills. Descriptive statistics were used to analyze data. **Results:** This study, featuring mostly females with less than 5 years of experience, makes an important discovery of approximately 63% having no prior trauma care training. Despite giving a hint of the overall reported confidence of 64%, lack of confidence is seen in more advanced trauma care skills like wrapping pelvic fractures and applying three-sided dressings. Reported major barriers in the

implementation of WHO essential trauma care guidelines included limitations of training opportunities, inadequate space, lack of equipment and supplies, and prereferral stabilization. **Conclusion:** This study assessed Mwanza city district hospitals' capacity to implement the WHO's essential trauma care guidelines. Findings show providers are confident in basic assessment skills but less so in advanced interventions (e.g., pelvic fracture management, chest injury care). These gaps reflect results from broader deficiencies in trauma-specific training, compounded by shortages of equipment /infrastructure, a systemic issue in LMICs. Strengthening trauma care as per WHO EsTC guidelines requires sustainable professional development, equitable resource allocation, and supportive institutional leadership in Mwanza and comparable settings.**Keywords:** Essential trauma care guidelines; World Health Organization; Health Care Providers; District Hospitals; Mwanza city, Tanzania; Implementation**.**

389. Onesmo, A.K. (2025). The Role of Apo E Gene Mutations in Glycemic Control Among Type 2 Diabetes Mellitus Patients in Regional Referral Hospitals in Dar-Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: In Dar-es-Salaam, the growing burden of Type 2 Diabetes Mellitus (T2DM) is compounded by poor glycaemic control, increasing the risk of T2DM complications. While non genetic factors contribute, emerging evidence suggests that APOE gene mutations may also influence glycaemic outcomes. However, such genetic data are limited in Sub-Saharan Africa, including Tanzania, limiting their integration into local T2DM care. **Broad Objective:** This study aims to assess the role of APO E gene mutations in glycaemic control among adult patients with Type 2 Diabetes Mellitus in referral regional hospitals in Dar es-Salaam. **Materials and Methods:** A cross-sectional study was conducted at regional referral hospitals in Dar-es-Salaam, where 190 patients with Type 2 Diabetes Mellitus (T2DM) aged 18 years and above were conveniently recruited. Demographic characteristics and glycaemic status were obtained from medical records and face-to-face interviews. A subset of participants was selected for APOE mutation analysis, which involved whole blood collection, DNA extraction, PCR amplification, gel electrophoresis, and Sanger sequencing. Data were entered and analysed using Microsoft Excel and IBM SPSS version 20. Bioinformatics tools were employed for analysis of the sequenced APOE data. **Results:** A total of 190 T2DM patients were enrolled (mean age 56.8 ± 9.4 years; 65.3% female). 70.5% demonstrated poor glycaemic control (HbA1c ≥ 7%). Among sequenced patients, 8 yielded high-quality APOE sequences. Two participants had no mutations; three had only benign variants located in the 3′ untranslated region (3′UTR); and three carried deleterious mutations in the coding region. One participant had a C130S substitution (c.389G>C), another had an E84Dfs4 frameshift caused by a TA insertion (c.251_252insTA), and a third harbored a pathogenic combination of C130R (rs429358, defining APOE ε4 allele) and T85Nfs80 (c.252_253insA). Additionally, one participant showed a rare E84V missense change with a concurrent frameshift (E84Vfs*4), and another had rare benign insertions in the 3′UTR. Most deleterious mutations were observed in individuals with poor glycaemic control. **Conclusion:** Poor glycaemic control prevails among T2DM patients in this population. Classical and novel APOE exon 4 mutations identified in this study, some of which may influence indirectly influence glycaemic control. **Recommendations:**

Large longitudinal studies using a large sample size are required to investigate the mutations and their effect on glycaemic control outcomes to validate the insight brought by this study.

390. Othman, A. S. (2025). Prevalence of diarrhea and associated risk factors among children under five in Kongwa District. Muhimbili university of health and Allied Sciences.

Abstract

Background: Diarrhea is a major cause of under-five mortality. In Kongwa District, a semi-arid rural area in Tanzania, it represents the second leading cause of morbidity, yet local evidence on specific risk factors was limited. Objective: To determine the prevalence and identify the risk factors for diarrhea among children under five in Kongwa District, Tanzania. Materials and Methods: A community-based cross-sectional study was conducted among 344 households with children under five, selected via multistage sampling. Data were collected using structured questionnaires and analyzed using logistic regression. The study was conducted between May and June 2025. **Results:** The two-week prevalence of diarrhea was 18.7%. Significant independent risk factors from multivariable analysis included: lack of piped water (AOR: 0.16, 95% CI: 0.06–0.43), absence of water chlorination (AOR: 0.23, 95% CI: 0.09–0.58), younger child age, and higher caregiver education level (AOR: 2.78, 95% CI: 1.04–7.44). The counterintuitive association between higher caregiver education and increased risk of diarrhea may reflect differential healthcare-seeking behavior, reporting accuracy, or a gap between knowledge and practice of hygiene behaviors among educated caregivers. **Conclusion:** Diarrhea remains a major health problem in Kongwa District, primarily driven by inadequate access to safe water and the practice of hygiene behavior. The District Council and health partners should prioritize expanding piped water systems, scaling up chlorination programs, and emphasizing the practice of hygiene behaviors.

391. Otieno, O.M. (2025). Nurses' Understanding of Intensive Care Unit-Acquired Delirium, Management and Prevention in Patients Admitted at Muhimbili National Hospital, Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Intensive Care Unit-acquired delirium (ICU-AD) is a serious complication affecting critically ill adult patients in Intensive Care Units (ICUs). It significantly impacts patient recovery, contributing to prolonged hospital stays, and is an independent factor for increased mortality, increased morbidity, and short-to long-term cognitive impairment. In Tanzania, ICU settings face unique contextual challenges such as limited staffing, scarce resources, and the absence of structured delirium protocols, which influence nursing practice. Nurses, being the primary bedside caregivers, are essential in identifying, managing, and preventing ICU-AD, whose nursing care practice is limitedly explored in Tanzania. **Objectives:** This study explored nurses' understanding, management and preventive measures for ICU-AD, Dar es Salaam. **Methodology:** This study employed a descriptive qualitative approach to explore nurses' understanding, management, and preventive measures of ICU-AD for critically ill adult patients at Muhimbili National Hospital

(MNH). Fifteen registered nurses working in the ICU were purposively selected from the medical and surgical ICUs. Data were collected through semi-structured, face-to-face interviews using open-ended questions, audio recordings, and field notes. The six-step thematic analysis framework guided data analysis using NVivo software. **Findings:** Three key themes emerged: Experience-based recognition and management of ICU-AD; Limited use of standardized assessment tools such as CAM-ICU and ICDSC; and Barriers to prevention and protocol implementation. Nurses relied on personal experience, sedation, and physical restraints, with minimal application of structured non pharmacological approaches such as the ABCDEF bundle. Constraining factors included lack of training, high workload, inadequate guidelines, and limited multidisciplinary collaboration. **Conclusion:** Nurses' efforts in managing ICU-AD are commendable but remain dependent on experience rather than evidence-based guidelines. Strengthening ICU nursing practice through training, institutional support, and integration of validated tools is crucial. The findings underscore the need to develop context-specific delirium prevention protocols to enhance critical care nursing practice in similar resource-limited settings. Implementing nurse-led, evidence-based delirium prevention strategies could improve patient outcomes, reduce ICU stay, and enhance the quality of critical care across Tanzanian ICUs and comparable low-resource environments.

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392. Palilo, H. (2025). Prevalence of malaria and factors associated with optimal uptake of sulfadoxine-pyrimethamine for malaria prevention among pregnant women in Nzega district council. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The World Health Organization (WHO) recommends the use of sulfadoxine pyrimethamine (SP) as one of the strategies in preventing malaria in pregnant women. Despite the substantial prevalence of malaria in Tabora region, Tanzania, only 32% of the pregnant women nationwide and 14.8% in Tabora region have received at least three doses of SP. Therefore, in Nzega district Tabora region, more than 85% of the pregnant women are at risk of malaria and its complications, such as anemia, low birth weight, preterm delivery, and maternal and fetal mortality. **Objectives:** Was to determine prevalence and factors associated with the uptake of at least three doses of sulfadoxine-pyrimethamine for malaria prevention among pregnant women in Nzega district council. **Materials and methods:** The study employed a cross-sectional design with quantitative data collection method among pregnant women attending health facilities in Nzega district council. Sociodemographic characteristics, knowledge, and perceptions of SP-IPTp were obtained using a structured questionnaire, while obstetric history and SP uptake were extracted from ANC cards. Malaria diagnosis was obtained using rapid diagnostic tests and blood slides to detect Plasmodium species. Data analysis was performed using Stata version 17, with categorical variables summarized by frequencies and percentages, and numerical data by median and interquartile range. Relationships were tested using chi-square and Fisher's exact tests. Variables with $p \leq 0.2$ in univariate analysis were included in multivariable modified Poisson or logistic regression to determine adjusted prevalence or odds ratios, with a significance level of $P \leq 0.05$. **Results**: The optimal level of SP uptake was 55.1%, with a malaria prevalence of 2.8% by MRDT. About 38.70% of participants had a high knowledge level, and half showed favorable perception regarding malaria severity, SP safety, benefits, and barriers to accessing SP-IPTp. Reduced

chances of optimal SP uptake were linked to booking ANC in the third trimester (aPR = 0.58 (0.44–0.77), P = 0.000) and unfavorable perception of malaria severity (aPR = 0.75 (0.61–0.94), P = 0.010). Improved uptake was associated with more than six contacts (aPR = 1.74 (1.29–2.34), P = 0.000). Malaria was more common amon se with suboptimal SP uptake, though not statistically significant (aOR = 2.04 (0.42–9.9 0.377). **Conclusions and recommendations:** Half of pregnant women showed optimal uptake of SP, which is linked to a lower malaria prevalence. Favorable perceptions, early, and frequent ANC visits favors the optimal SP-IPTp coverage. Therefore, it is crucial to improve access to early and frequent ANC services and to improve perception of the significance of SP-IPTp through health education.

393. Paschal, B. (2025). Coping strategies to mitigate burnout among health care workers at Ligula Regional Referral Hospital in Mtwara. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Burnout is a major mental health concern among healthcare workers, leading to reduced performance and increased medical errors. Globally, burnout prevalence ranges from 21–77%, while in Tanzania it reaches 55–62%. Despite this high burden, limited evidence exists on coping strategies among Tanzanian healthcare workers. **Objective:** To determine the extent to which coping strategies to mitigate burnout are employed by health care workers at Ligula regional referral hospital in Mtwara. **Methods:** An analytical cross-sectional study was conducted among 206 healthcare workers selected through stratified random sampling. Data were collected using interviewer-administered questionnaires based on the Maslach Burnout Inventory (MBI-HSS) and analysed in Stata 15.1. Descriptive statistics summarized variables, while Poisson regression assessed associations between coping strategies and burnout, with significance set at $p<0.05$. **Results**: A total of 206 healthcare workers were enrolled, with a mean age of (32.8 ±7.2) years. The prevalence of burnout among the healthcare workers at Ligula Regional Referral Hospital in Mtwara, Tanzania, was 48.1% (99/206), predominantly characterized by moderate-to-high depersonalization and reduced personal accomplishment. Burnout was higher (25.2%, 52/206) among workers aged 30–39 years, females (25.2%, 52/206), those with a degree level of education (26.7%, 55/206), and working experience of <5 years (31.6%, 65/206). Problem-focused coping strategies such as instrumental support (aPOR = 0.30, p = 0.002) and positive reframing (aPOR = 2.73, p = 0.002) were independently associated with burnout. Regarding the emotion-focused strategies, self-blame **(**aPOR = 3.67, p = 0.002), acceptance (3.16, p = 0.003), emotional support **(**2.37, p = 0.012), and venting (3.04, p = 0.022) were significantly associated with burnout. Furthermore, in dysfunctional coping, substance use showed a strong independent association with burnout (aPOR = 5.09, p < 0.001). **Conclusions:** Nearly half of healthcare workers experienced burnout, largely influenced by coping strategies. Strengthening instrumental support and minimizing maladaptive coping behaviours, particularly substance use and self-blame, are critical to improving healthcare workers' resilience and patient care.

394. Peter, A. (2025). Alignment of healthcare delivery with the Clients Service Charter: Perspective of both patients and clinicians from Mwananyamala Regional Referral and

Sinza Palestina District Hospitals in Dar Es Salaam. Muhimbili University of health and allied science

Abstract

Background: Unsafe healthcare practices cause substantial harm globally, with 2.6 million deaths annually and high rates of adverse events in low- and middle-income countries. Weak infection prevention, ethical breaches, and systemic problems such as staff shortages undermine patient safety. Tanzania introduced the Client Service Charter (CSC) to improve accountability and patient-centered care, but implementation remains inconsistent. Objective: To assess the extent to which clinicians deliver services aligned with CSC standards from patients perspectives and to identify operational factors influencing CSC implementation from clinicians perspectives. **Methods:** This cross-sectional analytical evaluation used a convergent parallel mixed methods design. Structured exit interviews were conducted with 394 patients and 12 clinicians were interviewed as key informants. Quantitative data were analysed in Stata 17. Qualitative data were transcribed and analysed thematically using Dedoose. **Results:** High proportions of patients reported CSC-aligned care: 93.9% indicated services met CSC standards, 93.2% reported clinicians upheld professional conduct, and 90.1% confirmed infection-prevention practices. Regression analysis found significant associations between patient education level and perceptions of professionalism: patients with primary, ordinary, or tertiary education were less likely to report high professionalism compared to those with advanced secondary education (adjusted prevalence ratios [aPRs] 0.89-0.94). Patients with more than two facility visits in the past six months were more likely to report clinician professionalism (aPR 1.08; 95% CI 1.01-1.15). Qualitative data identified operational barriers, staff shortages, inadequate privacy, unstable information systems, and supply constraints, that help explain gaps in implementation. **Conclusion:** Most patients reported services consistent with CSC principles, particularly in ethics and infection prevention. Nonetheless, variability by education and visit frequency, together with operational constraints, limit full implementation. Strengthening CSC training, improving infrastructure and information systems, and increasing patient awareness are recommended to sustain equitable, patient-centered care.

395. Peter, D.E. (2025). Early Recognition and Initial Management of Children with Acute Kidney Injury in Primary Health Care: Healthcare Providers' Experience in Singida Region. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Acute kidney injury (AKI) is a disorder marked by a rapid decline in glomerular filtration rate and the build-up of waste products from metabolism for less than three months. It is a global health concern with significant implications for morbidity and mortality when it comes to children. High morbidity and mortality result from consequences such as metabolic acidosis, hyperkalaemia, fluid overload, and cardiovascular issues. Good clinical outcomes among children with AKI can be achieved through early recognition and initiation of management to prevent disease progression. However, evidence on early recognition and management of acute kidney injury in children is lacking, especially in low resource settings such as Tanzania. **Broad**

Objective: This study explored healthcare providers' experiences in early recognition and management of acute kidney injury among children attending primary healthcare centres in the Singida region. **Methodology:** The exploratory qualitative case study design was conducted. A purposive sampling was used to recruit healthcare providers with experience of caring for children. Fourteen in-depth interviews were conducted using a semi-structured interview guide. All interviews were audio recorded and lasted between 37 and 60 minutes. Audios were transcribed verbatim, translated to English, and analysed following Braun and Clarke's six phases of thematic analysis. **Results:** The results highlighted four themes, the first theme is techniques for early recognition of acute kidney injury with three subthemes, namely: reliance on observing physical and physiological changes, identification of common risk factors, and informed from referral notes and reported history of caregivers. The second theme is the initial management of acute kidney injury with three subthemes: treatment of underlying causes, patient stabilization and referral for optimal management, and professional collaborating practice and teamwork. Furthermore, third theme is challenges experienced in the management of acute kidney injury with three subthemes such as unreliable and limited resources for optimizing AKI clinical management, staff knowledge deficit and limited support on the management of AKI, and financial constraints for meeting AKI management expenses, and fourth theme is proposed strategies for providing optimal management of acute kidney injury with three subthemes namely: enhancing education and standardized vi AKI management, strengthening resources availability and financial support, and strengthening referral and specialist collaboration. **Conclusion and recommendation:** The study highlights the challenges in the early recognition and management of acute kidney injury (AKI) in children, including limited resources, knowledge deficits, and financial constraints. Strategic interventions like enhancing AKI education, standardizing management protocols, strengthening resource availability, and fostering referral systems are needed to improve care. These strategies can improve healthcare delivery in areas with limited resources, leading to better outcomes and prompt management for children.

396. Petro, P. (2025). Factors Influencing Male Perceptions of Female Partners' Use of Long-Term Contra. Ceptives In Ilala Municipal Council, Dar Es Salaam, Tanzania. **Muhimbili University of Health and Allied Sciences.**

Abstract

Background: Exploring factors influencing male perceptions of female partners' use of long-term contraceptives is vital for effective reproductive health strategies. An inadequate understanding of male perceptions hinders informed decision making and long-term contraceptive uptake. This study will investigate the factors influencing male perception, aiming to inform interventions promoting informed decision making and contraceptive uptake. By examining knowledge variables, cultural beliefs, and Religious, this research seeks to uncover the complexities surrounding male perception towards female contraceptive use. Enhancing knowledge in this area can lead to more effective communication strategies and improved reproductive health outcomes for couples. **Objectives:** This study aimed to assess factors influencing males' perceptions towards female partners' use of long-term contraceptives in Ilala Municipal Council, Dar es Salaam, Tanzania. **Methods and Materials:** The researcher conducted a cross-sectional survey using

quantitative methods within the community. The study recruited 239 men through convenience sampling. We used a pre-tested, structured questionnaire to collect data. Descriptive statistics was used to summarizing social demographic characteristics, knowledge and Male perceptions were assessed via a Likert scale (scores 1–5), Chi-Square was used to examined independent variables and dependent variable if there is significant association. Binary logistic regression was conducted in both bivariate and multivariable analysis to identify key factors influencing male perceptions by p-value of < 0.05 identified as Statistical Significance and results were expressed as adjusted odds ratios (aORs) with 95% confidence intervals (CIs). **Results:** The study found that 49.4% of participants held poor perceptions of their female partners' use of LCMs. Factors such as awareness of LCM removability (P = 0.01), sufficiency of information for decision making (P = 0.01), viewing LCMs as promoting maternal health (P = 0.002), and believing that LCMs enhance women's energy and wellbeing (P = 0.001) significantly influenced perceptions. Religious leaders' encouragement of LCM uses also played a major role (P = 0.001). Participants whose partners had secondary education were less likely to hold poor perceptions compared to those with college-educated partners (OR = 0.343, P = 0.029). Conversely, participants with only primary education showed a borderline higher risk of poor perceptions (OR = 2.377, P = 0.05). **Conclusion:** Knowledge, cultural, and religious factors strongly influence male perceptions of their female partners' use of LCMs in Ilala Municipal Council. Barriers such as myths, misconceptions, and limited knowledge remain widespread. Men with higher education, urban residency, and exposure to family planning campaigns were more likely to have positive perceptions. To address these challenges, stakeholders should develop male-focused programs, promote better partner communication, and implement culturally sensitive educational campaigns. These strategies can dispel myths, foster supportive attitudes, and improve reproductive health outcomes for couples.

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397. Phabian, E. K. (2025). Prevalence and factors associated with e-prescription errors among hospitalized patients receiving care at Muhimbili National Hospital in Dar es salaam, Tanzania. Muhimbili university of health and Allied Science.

Abstract

Background: Healthcare systems worldwide are increasingly adopting digital technologies like e-prescribing to enhance care quality and reduce medication errors. Tanzania's transition remains ongoing, with Muhimbili National Hospital (MNH) utilizing the Jeeva System for hospital management, including e-prescriptions. Despite benefits challenges such as prescribing errors persist. Inpatient settings are particularly vulnerable to e-prescription errors. However, data on e-prescription errors in Tanzania remain limited, highlighting the need for research. Objective: To determine the prevalence and factors associated with e-prescription errors, among hospitalized patients receiving care at Muhimbili National Hospital in Dar es Salaam, Tanzania. **Methodology:** This study employed a prospective observational design to assess e-prescription errors among hospitalized patients. A total of 393 inpatients were enrolled, and 1,202prescriptions were systematically reviewed. Data were extracted using a structured case report form, cleaned in Microsoft Excel, and analyzed using SPSS version27. Descriptive statistics were used to summarize patient characteristics, clinical profiles, and the frequency and types of e-prescription

errors. Bivariable analysis was conducted to identify factors potentially associated with prescription errors, and multivariable logistic regression was performed to determine independent predictors, with statistical significance set at $p < 0.05$. **Results:** Among 393 hospitalized patients at Muhimbili National Hospital, 72.5% experienced at least one e-prescription error, indicating a substantial patient safety concern while the most frequent errors identified were wrong dose (125 cases), wrong frequency (101 cases), and w ıg selection.85, 95% CI: 1.01–3.41, p = 0.047) were significantly more likely to exp e-prescription errors. **Conclusion and Recommendations:** E-prescription errors were highly prevalent among inpatients at Muhimbili National Hospital, with wrong dose, frequency and drug selection being the most common. These findings underscore the need for targeted interventions to enhance prescribing safety within the hospital's electronic prescribing system.

398. Philbert, A. (2025). Factors Associated with Lower Childhood TB Bacteriological Confirmation Rate in Mpanda Katavi Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Tuberculosis (TB) is a leading global cause of death, with children particularly affected due to diagnostic challenges. Childhood TB is difficult to confirm bacteriologically because of its paucibacillary nature and difficulty obtaining sputum samples. In Tanzania, children under 15 years accounted for 16.2% of TB cases in 2021, with Katavi region having the highest notification rate (26%). This study examined factors contributing to low childhood TB bacteriological confirmation in Mpanda Municipal, Katavi. **Objectives:** The study assessed healthcare workers' (HCWs) knowledge and skills in sputum induction and gastric aspiration, explored infrastructural gaps, and identified systemic and procedural challenges limiting childhood TB diagnosis. **Methods:** A mixed-methods design was used. Quantitatively, 170 HCWs completed structured questionnaires; data were analyzed in SPSS. Qualitatively, 12 key informants (clinicians, nurses, laboratory staff) were interviewed, with thematic analysis applied. **Results:** Knowledge was moderate: 63.5% for sputum induction and 70.6% for gastric aspiration. Practical experience was lower, with only 29.8% and 36.9% ever performing the procedures. Confidence levels were also low (22.4% and 24.1%). No significant association was found between cadre and knowledge. Qualitative findings highlighted barriers at individual (limited training, low confidence), organizational (staff shortages, weak referral systems, lack of equipment), resource (limited lab capacity, delayed GeneXpert results), and community levels (low parental awareness). **Conclusion:** Although HCWs showed fair knowledge of diagnostic techniques, practical competence and confidence were limited. Structural and community-level barriers further constrained early detection and confirmation of childhood TB. **Recommendations:** The study recommends regular hands-on training for HCWs, improved provision of equipment and staffing, decentralization of TB diagnostic services, and strengthened community awareness campaigns to promote early diagnosis.

399. Philipo, E. (2025). Evaluating the effectiveness of the rapid alert system for detecting and preventing substandard and falsified medicines: insights from national medicines

regulatory authorities in eastern and southern Africa. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Access to quality, safe, and effective medicines is essential for reducing global morbidity and achieving universal health coverage by 2030. However, substandard and falsified (SF) medicines pose a significant public health threat. In response, the World Health Organization launched the Rapid Alert system (RAS) in 2013 as part of the Global Surveillance and Monitoring System to promote reporting of SF medicines by various stakeholders. However, compared to other settings, National Medicines Regulatory Authorities (NMRAs) in Sub-Saharan Africa (SSA) largely lag in providing SF alerts. **Objectives:** To describe the categories, and six-year trends (2019-2024) of rapid alerts and product recalls for SF medicines issued by NMRAs in Eastern and Southern Africa, and to identify the key operational barriers and enabling factors that influence effective implementation of the WHO Rapid Alert System within these agencies. **Materials & Methods:** A cross-sectional study with mixed methods was conducted among ten NMRAs in Eastern and Southern Africa. Key informant interviews (KIIs) explored operational barriers for improving RAS implementation. A customized excel sheet was used to capture quantitative data from NMRAs' websites and shared databases. Thematic analysis was used for qualitative data, while quantitative data were analyzed using R software version R.4.4.3. **Results:** Overall, there is an increase in the number of SF reports over the years 2019-2024. Of the 757 SF medicine alerts and recalls issued, 90.1% involved substandard products. Antibiotics (18.9%) and analgesics (11.8%) were the most frequently affected therapeutic classes. Tablets, on the other hand were the predominant dosage form (42.9%). The leading reasons for recalls and alerts included physical or organoleptic defects (36.0%), regulatory non-compliance (21.1%), and contamination (19.4%). Nearly half (46.3%) of the poor-quality medicines originated from India. Factors related to limited resources and political environment were pointed as key barriers in implementing SF Rapid Alert Systems. On the other hand, aspects related to existing frameworks and technology adoption, among others were highlighted as crucial enablers. **Conclusions and Recommendation**: This study has highlighted aspects for the smooth implementation of SF Rapid Alert Systems by NMRAs in the wider region of SSA. Their possible adoption of the key enablers and strategies by respective NMRAs will substantially contribute to the ongoing efforts in combating the SF medicines crisis. NMRAs in Eastern and Southern Africa should consider adopting the suggested changes in their routine operations to enhance public health outcomes through more robust surveillance of SF medicines.

Key words: *Substandard and falsified medicines, Rapid Alert System (RAS), National Medicines Regulatory Authorities (NMRAs), Regulatory challenges, Eastern and Southern Africa, medicine recalls and alerts.*

400. Pius, T. (2025). Patterns of Laryngeal Cancer Among Patients Attending the Otorhinolaryngology Department at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Laryngeal cancer is the second most common head and neck cancer worldwide and remains a major clinical and public health challenge, particularly in resource limited settings where patients frequently present at advanced stages. It accounts for 30–40% of head and neck cancers, with over 189,000 new cases and 103,359 deaths reported globally in 2022 (GLOBOCAN). The burden is disproportionately high in low- and middle-income countries, where delayed presentation and limited diagnostic resources contribute to poor outcomes. In sub-Saharan Africa, including Tanzania, data are scarce, but clinical experience suggests a rising number of cases, often detected at advanced stages. **Aim:** To determine the risk factors, clinicopathological characteristics, and stage at diagnosis of laryngeal cancer among patients attending the Otorhinolaryngology (ORL) department at Muhimbili National Hospital (MNH), Tanzania. **Methods:** A hospital based cross-sectional study was conducted at MNH from September 2024 to March 2025, involving 52 patients with histologically confirmed laryngeal cancer. Patients were enrolled through convenience sampling, and quantitative methods were used for data collection and analysis. Data on socio-demographic, risk factors, clinicopathological features, and clinical stage were collected using a clinical survey form and analyzed using Statistical Package for Social Sciences (SPSS) version 27. Existing relationships between risk factors and clinical stage at diagnosis were assessed using Fisher's exact test, with $p < 0.05$ considered statistically significant. **Results:** Majority 33(63.4%) of patients were in the 6^{th} to 7^{th} decades of life with a mean age of 60.9 ± 10.7 years. Male preponderance 50(96.2%) with a male-to-female ratio of 25:1 was observed. Cigarette smoking (31.2%), alcohol use (28.4%), and a combination of smoking and alcohol use (20.2%) were the most frequently reported risk factors, while occupational exposure (1.8%) was the least reported risk factor. Glottic cancers 24(46.2%) were most common, with hoarseness (36.2%) and stridor (22.7%) being the commonest symptoms reported. All cancers (100%) were squamous cell carcinomas, of which 36(69.2%) were moderately differentiated. Most patients with laryngeal cancer 33(63.5%) presented at an advanced clinical stage (Stage III-IV). Statistically significant association was observed between advanced stage disease and smoking ($p = 0.019$), alcohol use ($p = 0.008$), combination of smoking and alcohol use ($p = 0.002$), and cancer subsite ($p = 0.001$). **Conclusion:** A remarkable proportion of patients with laryngeal cancer at MNH presented at an advanced stage, with modifiable risk factors, particularly smoking and alcohol use being significantly associated with advanced stage. Significant association was also found between advanced stage of laryngeal cancer and anatomical subsites, particularly supraglottic and trans glottic subsites. **Recommendations**: The study highlights the need for strengthened prevention and early detection of laryngeal cancer through targeted screening, public awareness, routine ear, nose and throat (ENT) evaluation at the level of primary health care facilities, particularly among high risk and older individuals. Engage policymakers to strengthen and enforce regulations on occupational health and tobacco control, aiming to reduce exposure to cigarette smoking and alcohol consumption.

401. Protas, M.J. (2025). Innovative Approaches to Pharmaceutical Regulation: Impacts and Challenges of Regulatory Information Management System (Rims) on Medical Product Regulatory Processes in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The process of submitting and applying regulatory services for medical products has advanced significantly in the last two decades. This is due to innovative digital technologies resulting from advancements in the information technology sector. In Tanzania, before the introduction of the Regulatory Management Information System (RIMS), the process of medical product regulatory submissions and applications was completely paper-based. The process was tedious, costly and time-consuming, and resulted in significant delays in service delivery; for example, registration of one product could take up to two years. However, with innovative technological advancements in information technology, Tanzania Medicines and Medical Devices (TMDA) has developed robust regulatory management systems that provide web-based platforms for regulatory submissions and applications electronically. The system has enabled dossier submission and other regulatory services applications to be done electronically. However, there is no documented data to show what extent this system has impacted importers/marketing authorization holders and accessibility of medical products in the country. **Objective:** To assess the impacts and challenges of Regulatory Management Information Systems (RIMS) on the regulation of medical products in Tanzania. **Methodology:** This cross-sectional mixed-methods study employed quantitative and qualitative designs. Semi-structured online survey questionnaire was used to collect data from relevant stakeholders; specifically, from regulatory affairs officers from various companies involved in medicine importation and distribution in Tanzania. Key informant interviews were conducted with 13 participants from TMDA as well as from other stakeholders. Quantitative data were analysed using Microsoft Excel and Stata v 17.0, while qualitative data were analysed using thematic analysis. **Results:** Results of the survey and interviews have revealed that the system has contributed to improved service timelines, improved transparency, improved data management, enhanced efficiency, improved control and compliance, improved communication and real-time feedback between the agency and its clients, increased customer satisfaction and a reduction in administrative and operational costs .Key barriers and challenges include internet connectivity, power interruptions, system downtime, limited integration and interoperability, data upload constraints, partial digitalization and undesired process interdependency. The system was found to incorporate essential features to ensure data safety and security. **Conclusion:** Despite some challenges such as internet connectivity, system downtime, limited integration and data size limitations, the RIMS system has brought significant revolutions in medical product regulation in Tanzania in terms of streamlined regulatory services, enhanced efficiency, transparency and enhanced effective customer-agency communication. The study recommends adequate investment in system upgrades, enhanced disaster recovery plans, improved integration and adoption of advanced components and technologies to optimize TMDA RIMS system benefits.

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402. Rajabu, A.D. (2025) Diagnostic yield, safety and success rate of Medical Thoracoscopy in patients with undiagnosed pleural effusion at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pleural effusion, an accumulation of excess fluid in the pleural space, often presents a diagnostic challenge with more than 25% of exudative pleural effusions remain undiagnosed as conventional methods like thoracocentesis and blind pleural biopsy often fail. Medical thoracoscopy (MT) has emerged as a valuable diagnostic tool for patients with undiagnosed pleural effusion, offering both diagnostic and therapeutic benefits. However, this procedure's feasibility, safety, and diagnostic yield in the Tanzanian context, particularly at Muhimbili National Hospital, remain underexplored. **Aims:** To evaluate Success rate, Safety and Diagnostic yield of Medical Thoracoscopy among patients with undiagnosed pleural effusion at MNH from November 2023 to February 2025. **Methodology:** This was a hospital-based Am bidirectional cross-sectional study conducted at the Pulmonology Unit of Muhimbili National Hospital. The study included 63 adult patients (≥18 years) who underwent medical thoracoscopy (MT) for undiagnosed pleural effusion between 1st November 2023 and 28th February 2025. Data was collected using an investigator-administered structured questionnaire. The success rate of MT was defined as the number of procedures that were completed with good visualization of the pleura and acquisition of adequate tissue for histological analysis. Safety was assessed by documenting complications occurring during the procedure or within 24 hours afterward. Diagnostic yield referred to the proportion of participants in whom a definitive diagnosis was established following MT.Ethical clearance was obtained from the MUHAS Research and Publications Committee, and permission to conduct the study was granted by the administration of Muhimbili National Hospital. Data analysis was performed using SPSS version 27. Descriptive statistics were summarized as means with standard deviations for continuous variables and as frequencies with proportions for categorical variables. **Results:** The mean age of participants was 50 ± 16 years; 50.8% were female. The most common presenting symptoms were cough (87.3%), dyspnea (85.7%), and weight loss (57.1%). The procedural success rate was 100%, with all thoracoscopies completed as planned. The diagnostic yield was 95.2%, with Tuberculosis (52.4%) and Malignancy (33.3%) being the predominant diagnoses. Minor complications included incision site pain (100%), surgical site infection (4.8%), and subcutaneous emphysema (3.2%). No major complications or deaths were reported. **Conclusion:** Medical Thoracoscopy has proven to be a reliable and safe procedure for diagnosing undiagnosed pleural effusion. It successfully identified the underlying causes in most cases, with Tb and Malignancy being the most common diagnoses. The procedure was generally well-tolerated, with minimal complications and no procedure-related deaths. These findings align with previous studies and highlight the value of MT as an important tool in diagnosing pleural effusions.

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403. Ramadhani, H. (2025). Exploring experiences of fluid management among the patients undergoing maintenance hemodialysis at Regional Referral Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic kidney disease (CKD) is a global health issue that affects millions worldwide. A critical complication of CKD is fluid overload, which leads to severe health consequences if not effectively managed. In Tanzania, fluid management challenges persist despite the growing availability of dialysis services. Limited data exist on the day-to-day experiences, challenges, and strategies employed by patients undergoing maintenance hemodialysis regarding

fluid management. Aim of the Study: To explore the experiences of fluid management among the patients undergoing maintenance hemodialysis at Regional Referral Hospitals in Dar es Salaam. **Methodology:** This qualitative study utilized a phenomenological qualitative design. Data were collected from 18 purposively selected participants through in-depth interviews, with the final sample size determined by data saturation. Interviews were focused on patients' understanding, challenges, and strategies related to fluid management. Data was audio-recorded, transcribed, and analyzed using a thematic approach. **Results:** Three main themes emerged: (1) comprehension of fluid intake, restriction, and overload, (2) challenges to fluid restriction adherence. (3) Multifaceted strategies of fluid management for fluid management. Most participants demonstrated awareness of fluid sources and the consequences of fluid overload. They employed various strategies such as rationing fluids, avoiding salty foods, and using culturally adapted practices like sucking ice. However, challenges, including hot weather, social events, and emotional distress, hindered adherence. Family and peer support played a critical role in enabling self-care. **Conclusion:** While patients on maintenance hemodialysis in Dar es Salaam show a good understanding of fluid restrictions, multiple environmental, emotional, and social challenges limit adherence. Tailored education, psychosocial support, and community-based interventions are essential to improve fluid management outcomes.

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404. Rameck, R. M. (2025). Post-discharge mortality and its associated factors among neonates admitted with sepsis at Amana and Temeke Referral Hospitals. Muhimbili university of health and Allied Sciences.

Abstract

Background: Neonatal sepsis is a major public health challenge, particularly in sub-Saharan Africa, where 2.6 million of the 6.9 million global cases of possible serious bacterial infection (PSBI) occur annually, contributing to 30–50% of neonatal deaths in low- and middle-income countries (LMICs). Post-discharge mortality remains a critical issue, necessitating an evaluation of neonatal health outcomes after discharge from neonatal units to inform strategies for prevention and management. Broad Objective: To determine the incidence of post-discharge mortality and associated factors among neonates admitted with sepsis at Amana and Temeke Regional Referral Hospitals in Tanzania. **Materials and Methods:** A prospective cohort study was conducted at Amana and Temeke Regional Referral Hospitals. A total of 335 mother neonate pairs were recruited using consecutive sampling. Data were collected via interviewer administered questionnaires and medical record reviews. Neonates discharged alive were followed for 60 days through scheduled hospital visits and phone calls conducted by trained research assistants to ascertain post discharge mortality and morbidity, including any readmissions and deaths during readmission. The incidence of post discharge mortality was calculated as the number of deaths within 60 days after discharge divided by the total number of neonates discharged alive (n=335), expressed as a percentage (2.6%). Fisher’s exact test was used to identify factors associated with mortality; variables with p values <0.05 were considered statistically significant. **Results:** Of the 335 mother-neonate pairs enrolled, 335 completed the 60-day follow-up. The mean maternal age was 27.9 ± 6.3 years. The incidence rate of post-discharge mortality was 3% (30 deaths per 1,000 live discharges). Post-discharge mortality among neonates admitted with sepsis was significantly

associated with multiple maternal and neonatal factors. Neonates with low birth weight (≤2.5 kg, p = 0.002), preterm birth (≤37 weeks, p = 0.017), HIV-positive status (p = 0.032), and abnormal white blood cell counts (<4 or >20 × 10^9/L, p = 0.003) exhibited higher mortality rates. Post-discharge factors further increased mortality risk, including lack of post-discharge care (p < 0.001), absence of discharge counseling (p = 0.015), care at health centers (p < 0.001), and failure to readmit for complications (p < 0.001). Within 60 days post-discharge, 40 infants (10.3%) were readmitted, with 15 readmitted once and 18 experiencing multiple readmissions. The most common presenting symptom was poor feeding (53.9%), and 90% of deaths were related to infection. Notably, 80% of the deaths occurred in the hospital, and 70% happened within the first two weeks after discharge. **Conclusions:** The 3% post-discharge mortality rate highlights the persistent vulnerability of neonates after hospital discharge, though lower than in comparable settings. Key risk factors include low birth weight, prematurity, HIV exposure, elevated WBC, and inadequate discharge counseling and follow-up care. Most deaths were infection-related and occurred during readmission within the first two weeks. These findings underscore the need for enhanced post-discharge care systems, including robust follow-up mechanisms and counseling, to reduce preventable neonatal mortality and improve outcomes in high-risk newborns.

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405. Rashid, J.S. (2025). Prevalence and factors associated with depressive symptoms among adults with glaucoma attending the ophthalmology clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Glaucoma is identified as one of the leading causes of blindness worldwide. Its chronic nature and the potential for irreversible vision loss contribute to significant distress among affected individuals. Studies estimate that around 25% of persons with glaucoma experience depression, negatively impacting their quality of life and treatment adherence. However, data on the prevalence of depressive symptoms among people with glaucoma in Tanzania is limited. **Objective:** This study aimed to determine the prevalence and factors associated with depressive symptoms among adults with glaucoma attending the ophthalmology clinic at Muhimbili National Hospital. **Materials and methods:** This is a hospital-based cross-sectional study involving 297 adults aged 18 years and above with glaucoma, who were recruited consecutively from the ophthalmology clinic at Muhimbili National Hospital. Data were collected through face-to-face interviews using structured questionnaires that assessed biological and psychosocial factors. The Patient Health Questionnaire-9 and Oslo Social Support Scale were used to assess depressive symptoms and social support, respectively. Data were analyzed using STATA (version 16). Bivariate and multivariable regression analyses were performed to assess the association between probable depression and the biopsychosocial factors. Odds ratios and 95% confidence intervals were used to quantify the strength of the association. Statistical significance was considered at a p-value of <0.05. Ethical clearance was sought from the Institutional Review Board of Muhimbili University of Health and Allied Sciences. Informed consent was obtained from the study participants. **Results:** A total of 297 participants completed the study with a response rate of 95.2%. The mean age of participants was 63.6 years (SD±12.8), and over half of the participants 159 (53.5%) were females. The prevalence of probable depression was 11.1% with 11.8% scoring

mild, 8.7% moderate, 2.4% moderately severe, and none scoring severe depressive symptoms. Living with family members (AOR 0.06; CI: 0.01–0.99; P=0.049), having moderate social support (AOR 0.07; CI: 0.03–0.043; P=0.001), and strong social support (AOR 0.04; CI: 0.02–0.23; P<0.001) were significantly associated with a lower likelihood of probable depression. **Conclusion:** Approximately 1 in 10 individuals with glaucoma experience depression. Living with family and having good social support are protective factors against depression in people with glaucoma. These findings underscore the need for a multidisciplinary approach to integrate mental health services and address psychosocial support in ophthalmology clinics. Larger longitudinal studies using age-appropriate tools are needed to better explore the mental health needs of people living with glaucoma.

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406. Rashid, K. S. (2025). Aesthetic treatment needs and factors related to satisfaction with dental appearance among patients attending selected Hospitals in Unguja, Zanzibar. Muhimbili university of health and Allied Sciences.

Abstract

Background: Dental appearance has become increasingly important as awareness of aesthetic dental procedures has grown and significantly impacts an individual's self-perception, social interactions, and overall quality of life. Patients who are dissatisfied with their dental aesthetics may experience psychological distress. Understanding factors influencing satisfaction is essential for developing targeted aesthetic treatment strategies that align with patient expectations and improve overall satisfaction. **Aim:** This aim of this study was to determine the level of satisfaction with dental appearance, identify the factors influencing this satisfaction, and assess the aesthetic dental treatment needs among patients attending selected hospitals in Unguja, Zanzibar. Method: An analytical cross-sectional hospital-based study was conducted in five selected hospitals in the Urban West region of Unguja, Zanzibar. A total of 549 adult patients (≥18 years) were recruited using multistage cluster sampling combined with convenience sampling. Data were collected through structured interviewer-administered questionnaires assessing socio-demographic characteristics, satisfaction with dental appearance, factors influencing satisfaction and subjective aesthetic treatment needs. Clinical oral examinations were performed to assess objective aesthetic treatment needs. Data fed into a computer, processed and analysed using IBM SPSS statistics for windows, version 26.0. Descriptive statistics was done summarizing participant characteristics, satisfaction levels, and treatment needs. Pearson's Chi-Square tests evaluated associations between sociodemographic, clinical factors and satisfaction. Logistic regression estimated odds ratios for predictors of satisfaction, p value of less than 0.05 was regarded significant. Cohen's Kappa assessed agreement between subjective and objective determined treatment needs. **Results:** A total of 549 participants with a response rate of 100% were obtained in five hospitals. The age ranged from 18-70 years (median age: 29). Of all participants 75% were satisfied with their general dental appearance, particularly younger individuals, females, and urban residents. Satisfaction was closely linked to positive perceptions of specific dental features like alignment and color, though not significantly influenced by sex or education. Self-perceived treatment needs were reported by 40.3% of participants, with tooth whitening being the most perceived need. Objective clinical assessments identified 42.2% as having an aesthetic treatment need, with orthodontics and

restorations being the most prevalent. Cohen's kappa revealed only fair agreement between subjective and objective assessments (κ = 0.283), highlighting a notable gap between perceived and actual clinical needs. **Conclusion:** Satisfaction with dental appearance among adults in Zanzibar is generally high and strongly linked to specific dental aesthetic factors rather than socio-demographic characteristics. There is a moderate discrepancy between patients' self-perceptions and clinical evaluations of dental aesthetic needs in Zanzibar, with notable gaps in awareness, especially regarding orthodontic treatment. These findings underscore the importance of targeted oral health education and integrated clinical screening to better align patient perceptions with objective needs, ultimately improving treatment outcomes and patient satisfaction.

407. Raymond, G. (2025). Factors Associated with Husbands' Involvement in Institutional Childbirth Services in Southern Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Maternal mortality remains a leading cause of death among women of reproductive age in Sub-Saharan Africa. Male involvement in institutional childbirth is a recognized strategy to improve maternal health outcomes by enhancing timely care-seeking, birth preparedness, and support during delivery. **Objective:** To assess the prevalence and determinants of husbands' involvement in institutional childbirth services in Namtumbo District, Tanzania. **Methods:** A community-based cross-sectional study was conducted among 592 husbands of women who delivered in the past 12 months. Data were collected using structured questionnaires and analysed using SPSS v25. Modified Poisson regression identified factors associated with male involvement. **Results**: Of the respondents, 59.8% were involved in institutional childbirth—moderate compared to national targets aiming for universal male engagement. Significant predictors included age ≥45 years (RR = 2.18), participation in health education (RR = 2.82), positive perception (RR = 2.65), and adequate maternal health knowledge (RR = 2.49). **Conclusion:** While male involvement was higher than some regional estimates, it remains below optimal levels. Strengthening male-focused education and facility-based engagement strategies is essential to reduce maternal mortality and improving childbirth outcomes.

408. Rehema, H.S. (2025). Clinical Care Outcomes of Critically Ill Adult Patients at Muhimbili National Hospital In 2024. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Despite substantial investments in critical care infrastructure, such as expanding ICU and high-dependency units, mortality among critically ill patients remains disproportionately high at Muhimbili National Hospital (MNH), Tanzania. **Objective:** To identify key clinical outcomes among critically ill adult patients admitted to MNH's ICU in 2024, to inform risk stratification and optimize resource allocation. **Methods:** A retrospective cohort study was conducted using patient records from adult ICU admissions in 2024. Descriptive statistics summarized baseline characteristics. Multinomial logistic regression identified factors independently associated with being discharged to a ward or home versus in-ICU death.

Associations were considered statistically significant at $p < 0.05$. **Results:** Out of 378 patients (median age: 50.5 years; 50.3% male), 343 (90.7%; 87.4 – 93.5) died in the ICU, while only 22 (5.8%) were discharged to the ward or referred, and 13 (3.5%) were discharged home. In adjusted models, the use of vasopressors was the most significant predictor of mortality. Patients on vasopressors were 93% less likely to survive to discharge at any point (AOR = 0.07; 95% CI: 0.02–0.22; p < .001). Conversely, each one-point increase in Glasgow Coma Scale (GCS) was associated with an 18–20% increase in odds of discharge to ward (AOR = 1.18; 95% CI: 1.06–1.32; p = .002) or home (AOR = 1.20; 95% CI: 1.07–1.35; p = .002). Other variables—ICU unit, age, sex, dialysis, and mechanical ventilation—did not show independent associations after adjustment. **Conclusion:** High ICU mortality at MNH reflects a patient cohort with severe illness and limited physiological reserve. Vasopressor therapy and GCS score emerged as strong, independent predictors of outcome and should be prioritized in early triage and care planning. These results emphasize the value of bedside neurological assessment and hemodynamic monitoring in improving prognostication and guiding nursing vigilance in resource-limited ICUs. **Keywords**: Critically ill patients, Discharge status, ICU, Clinical Care Outcomes, and Critical Care, Glasgow Coma Scale, vasopressor.

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409. Remigius, R.S. (2025). Familial HLA Matching Among Tanzanian Families of Children with Sickle Cell Disease: A High-Resolution Nanopore Sequencing Feasibility Study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Sickle Cell Disease (SCD) remains a significant health challenge in Tanzania. Hematopoietic Stem Cell Transplantation (HSCT) remains the main curative option currently available in Tanzania, though gene therapy has shown promise in other settings. Currently, Tanzania lacks both high-resolution HLA typing services and a national HLA database, limiting the ability to identify compatible donors. This gap is particularly critical in genetically diverse populations, where accurate typing is essential for improving transplant outcomes. **Methods:** This descriptive cross-sectional feasibility study was conducted at Muhimbili National Hospital and involved seven families, each with a child diagnosed with sickle cell anaemia. Blood samples were collected from 22 individuals, of which 19 met the quality criteria for downstream processing and were subjected to high-resolution HLA typing using Oxford Nanopore Technology. Data analysis was performed using Nano TYPER™ software, Microsoft Excel, and RStudio, to evaluate allele distribution and assess sibling HLA match rates. In addition, a Gantt chart and manual cost log were utilized to assess the direct cost per sample and to track the turnaround time from sample collection to final report generation. **Results:** Across the 19 individuals, we identified 98 distinct HLA alleles from 11 loci: HLA A, B, C, DRB1, DRB3, DRB4, DRB5, DQA1, DQB1, DPA1, and DPB1. Among these, 13 were novel sequences that had not been previously documented. Two out of the six SCD patients (33%) had a fully matched sibling, indicating the potential for familial matches in the local context. The average turnaround time per sample was four days, including processing delays. Direct costs were approximately 837,000 Tanzanian Shillings per sample, which can vary based on the fluctuations of the foreign exchange rates and the number of samples per run. This cost profile suggests feasibility for local implementation with appropriate investment.

Conclusion: High-resolution HLA typing using Oxford Nanopore Technology is operationally feasible in Tanzania, offering a viable path to expand HSCT access for SCD patients. Larger studies are needed to build a comprehensive HLA allele database. Establishing a national HLA registry would enhance donor matching and support sustainable transplant infrastructure.

410. Risasi, A. (2025). Factors influencing access to anti-epileptic medications among people with epilepsy in Tanzania: a case of Ulanga District. Morogoro. Muhimbili University of health and allied sciences.

Abstract

Background: Access to antiepileptic medications among people with epilepsy (PWE) is an essential element to improve health-related outcomes. The majority of PWE in low- and middle-income countries encounter significant challenges in accessing appropriate treatment. Henceforth, there is a critical need to identify factors influencing access to anti-epileptic medications among PWE within the health system in the Tanzania setting. **Objective**: To assess the factors influencing access to anti-epileptic medications among PWE in Ulanga District, Morogoro, Tanzania. **Methodology:** A concurrent mixed-methods study design was conducted in Ulanga District, Morogoro. Quantitative data were collected from people with epilepsy using structured questionnaires and checklist, while qualitative data were obtained through in-depth interviews with key health officials. The study applied Five Elements of access to assess access to anti-epileptic medications. Quantitative data were analyzed using descriptive statistics, and qualitative data through thematic analysis. Triangulation of both methods enhanced validity and the findings. **Results:** The study reveal that four out of the five dimensions of access – availability, acceptability, affordability, and accommodation – are generally favorable within the Ulanga District context. Medicine is mostly stocked, healthcare providers are perceived as competent and respectful, and services are largely aligned with the patients' needs and capacities. However, accessibility emerges as a persistent challenge. Long travel distances, poor road infrastructure, and high transportation costs substantially hinder patients' ability to reach health facilities, thereby limiting the effectiveness of supportive access. **Conclusion**: Although the health system in Ulanga District generally supports access to anti-epileptic medications through reliable supply, affordability mechanisms, and patient-centered service delivery, key challenges remain. Long distances, high transport costs, and stockouts of certain essential drugs like sodium valproate and lamotrigine continue to disrupt treatment. Financial and sociocultural barriers also contribute to inconsistent adherence. Addressing these issues through improved drug supply, better insurance coverage, and ongoing community education is vital for ensuring equitable and sustained access to anti- epileptic medications.

411. Robert, M.H. (2025). Prevalence and factors associated with hospital-acquired anaemia among patients admitted to the Intensive Care Unit at Muhimbili National Hospital, Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Hospital-acquired anaemia (HAA) is a common complication among critically ill patients admitted to Intensive Care Units (ICUs) globally, often associated with adverse outcomes including increased morbidity, mortality, and prolonged hospital stays. **Objective:** This study aimed to determine the prevalence of HAA and the factors associated with HAA among patients admitted to the Intensive Care Unit at Muhimbili National Hospital (MNH), Dar es Salaam. **Methods:** A retrospective cross-sectional study design was employed, analyzing data of 293 patients admitted to the ICU without a prior diagnosis of anaemia at MNH. Descriptive statistics were used to determine HAA prevalence. Chi-squared tests were conducted to assess univariate associations between HAA and selected demographic and clinical variables. Bivariate and Multivariate Logistic regression analysis was performed to identify independent factors associated with HAA. Variables considered included age, gender, comorbidities, nutritional status, inflammation, and phlebotomy, length of stay and history of surgery. **Results:** The prevalence of HAA was found to be substantially high, with 73.72% (N=293). In univariate analysis, gender showed a statistically significant association with HAA (p=0.042), with a higher proportion of females (80.2%) compared to males (69.5%). Severity of illness, shown a statistically significant association (p=14.108, p=0.003). The overall multivariate logistic regression model was statistically significant (Ratio X2, p=0.0000), indicating that the included factors collectively explained some of the variation in HAA. **Conclusion:** Hospital-acquired anemia is highly prevalent among ICU patients at MNH, indicating a substantial clinical burden. While gender and severity of illness emerged as a significant univariate factor, the multivariate model suggest that HAA is a multifactorial issue, with individual contributions of common clinical risk. These findings underscore the urgent need for robust patient blood management strategies at MNH, including blood conservation efforts and targeted interventions, with particular vigilance for female patients. **Key terms:** Hospital-Acquired Anaemia (HAA), Prevalence, Factors, Muhimbili National Hospital, Tanzania.

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412. Rugemalila, T.M. (2025). Prevalence of medication adherence and associated factors among adult patients with hypertension and diabetes co-morbid in Dar es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Diabetes and hypertension are the most prevalent non-communicable diseases worldwide, affecting approximately 537 million and 1.28 billion people, respectively. They count around 7.5 million and 6.7 million deaths, respectively. Patients with both conditions are at higher risk of complications and complex medication regimens, thus affecting adherence. Globally, medication adherence prevalence ranges from as low as 7% to 80%. Poor adherence leads to severe health consequences and higher healthcare costs. **Objective:** This study aimed to determine the prevalence and factors associated with medication adherence among adult diabetic and hypertensive patients in Dar es Salaam. **Materials and Methods:** A hospital-based analytical cross-sectional study was conducted in Dar es Salaam at four health facilities (Temeke referral hospital, Amana referral hospital, Pugu, and Buguruni health centers) among patients aged 18 years and above with both hypertension and type 2 diabetes. Data were collected using a structured questionnaire, the Living with Medicines Questionnaire version 3 (LMQ-3), to assess medication-

related burden and patients' records review. Medication adherence was measured using the Proportion Days Covered method. In Descriptive analysis, categorical variables were presented in frequencies and percentages, and continuous variables were presented in means with Standard deviation. Modified Poisson regression was performed to identify factors associated with medication adherence. Only variables with p<0.05 were statistically significant. **Results:** A total of 502 participants were enrolled, with a mean age of 61 years (±11.94); the majority were females (66.5%), and 45.4% were aged between 50 and 64 years. The overall prevalence of medication adherence was 40.8% at 95%CI (36.5%-45.3%). Increased one unit mean scores in practical difficulties (APR = 0.54; 95% CI: 0.43–0.66; p < 0.001), side effects (APR = 0.81; 95% CI: 0.68–0.98; p = 0.029), interference with day-to-day life (APR = 0.55; 95% CI: 0.45–0.68; p < 0.001), and cost burden (APR = 0.77; 95% CI: 0.68–0.89; p = 0.001) were significantly associated with decreased medication adherence. Similarly, having higher education levels was associated with lower adherence (APR = 0.71; 95% CI: 0.53–0.96; p = 0.025). In contrast, being female (APR = 1.23; 95% CI: 1.09–1.44; p = 0.028), being employed (APR = 1.48; 95% CI: 1.15–1.89; p = 0.002), and having health insurance (APR = 1.51; 95% CI: 1.17–1.93; p = 0.002) were significantly associated with an increase in medication adherence. **Conclusion:** The prevalence of medication adherence was low among patients with hypertension and type 2 diabetes. Both medication-related burdens and patients, as well as socioeconomic factors, significantly influence adherence. These findings highlight the need for patient-centered interventions focused on reducing practical barriers, managing side effects, expanding health insurance coverage, ensuring the availability of medications, and strengthening health education tailored to patient needs.

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413. Rukwigwa, M. J. (2025). Workplace psychosocial factors and musculoskeletal disorder among garment workers in arusha city, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Musculoskeletal disorders (MSDs) remain a significant occupational health problem globally, particularly among garment workers who perform repetitive and physically demanding tasks. Despite their impact on productivity and workers' well-being, limited information exists on the psychosocial factors influencing MSDs in Tanzania. This study aimed to determine the prevalence of MSDs and assess their association with workplace psychosocial factors among garment workers in Arusha City, Tanzania. **Objective:** To assess psychosocial work factors and their association with musculoskeletal disorders among garment workers in Arusha city, Tanzania **Methods:** A cross-sectional study was conducted among garment factory workers in Arusha City. Data were collected using a structured questionnaire that captured information on socio-demographic characteristics, psychosocial work factors (such as workload distribution, task repetition, lifting frequency, and work pace), and the prevalence of MSD symptoms in selected body regions (wrist, upper back, and shoulder). Descriptive statistics were used to determine the prevalence of MSDs, while logistic regression analysis assessed the association between psychosocial factors and MSD occurrence. **Results**: The overall prevalence of MSDs among garment workers was 46%, with upper back pain being the most frequently reported symptom. Uneven workload distribution, frequent task repetition, and heavy lifting were significantly

associated with MSDs. Workers with uneven workload distribution were more likely to experience upper back pain (AOR = 3.37, 95% CI: 1.89–4.50, p = 0.002). In contrast, workers who performed tasks monthly had lower odds of upper back pain compared to those repeating tasks hourly (AOR = 0.12, 95% CI: 0.01–0.43, p = 0.003). Similarly, weekly lifting was associated with a reduced risk of upper back pain compared to hourly lifting (AOR = 0.22, 95% CI: 0.21–0.58, p = 0.036) **Conclusion:** The study revealed a high prevalence of MSDs among garment workers in Arusha City, largely influenced by psychosocial factors such as uneven workload distribution and repetitive tasks. **Recommendations:** Employers and factory managers should adopt balanced workload distribution, job rotation, and regulated work pace to minimize repetitive strain and prevent physical overexertion. Implementing these measures may reduce MSD risk and improve occupational health and productivity in the garment industry. **Keywords**: Musculoskeletal disorders, psychosocial work factors, garment workers, workload, repetitive tasks, Tanzania.

414. Runobo, T. (2025). Missed injuries in polytrauma patients admitted at Muhimbili Orthopaedic Institute -an observational cross-sectional study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Patients with polytrauma often experience missed injuries that can have serious consequences, including higher morbidity rates, prolonged hospital stays, increased costs, permanent disability, or even death. Despite advancements in clinical practices and trauma care technology, these injuries frequently remain undetected due to various risk factors and contributing causes. This study aims to quantify the impact of missed injuries and investigate the causes, contributing factors, and types of injuries overlooked during initial assessment and stabilization in the emergency department, as well as throughout hospital stays at the Muhimbili Orthopaedic Institute. **Objective:** To determine magnitude of missed injuries in Polytrauma patient admitted at Muhimbili Orthopaedic Institute from June 2023 to December 2023. **Materials and Methods:** An observational cross-sectional study was conducted, including skeletally mature patients aged 18 and above with multiple injuries and an Injury Severity Score greater than 16, admitted to Muhimbili Orthopaedic Institute. Patients meeting the inclusion criteria were recruited, and clinical information was gathered from polytrauma patients on admission. Thorough Re-evaluations to identify any overlooked injuries were done in the ward. Appropriate investigations were conducted for suspected missed injuries and documented in the patient's file, including those treated surgically. Data analysis, entry, coding, and cleaning were performed using the Statistical Package for the Social Sciences (SPSS version 20) focusing on variables such as age, sex, missed injury type and reasons for missed injury. **Results:** The study sample consisted with 255 polytrauma patients, predominantly of males (83.9%) with a mean age of 35.04 years, 68.2% were in young adults aged 18-38 years. The majority of participants had a low level of educational attainment, with 66.3% has primary education. The proportion of missed injury were found in 51.37% of the patients. Thoracic injuries were the most frequently missed (34.81%), with rib fractures observed in 29.7% of cases and clavicle fractures in 10.8%. The least missed injury was spinal fractures, accounting for about 3.16%. The rate of missed injuries in this study was shown to

be significantly associated with clinical errors, particularly in physical examinations (AOR: 2.922, 95% CI: 1.330–6.420, p = 0.008), followed by errors in surgical surveys (AOR: 2.366, 95% CI: 1.286–4.350, p = 0.005). and errors in the incorrect interpretation of radiological images (AOR: 4.886, 95% CI: 1.461–16.340, p = 0.010). **Conclusion and recommendation:** There is a significant proportion of missed injuries among polytrauma patients treated in our setting. Missed injuries in polytrauma patients were significantly influenced by various factors, such as errors in clinical assessment, surgical survey, and radiological interpretation, which were identified as key factors significantly associated with these missed diagnoses. We recommend enhancing training programs, implementing targeted interventions, adopting effective diagnostic tools, and utilizing standardized checklists to reduce the occurrence of missed injuries. **Conclusions:** Anxiety symptoms were found to be common among undergraduate students at MUHAS. Those who reported dissatisfaction with academic performance and perceived poor social support were likely to report anxiety symptoms. Recommendation: There is a need to enhance university mental health services through professional collaboration, regular screenings, and early interventions. Overall, prioritizing mental health promotion is essential for student wellbeing and academic success.rural areas. Improving patient satisfaction should prioritize gender-sensitive care, support for patients with chronic comorbidities, and enhanced communication and accessibility for those outside urban centers.

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415. Rwebangira, C.F. (2025). patients' characteristics, in-hospital and 30-day post-discharge mortality among mechanically ventilated adults at Muhimbili National Hospital, Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Mechanical ventilation remains a cornerstone of intensive care unit (ICU) management for respiratory failure and airway protection. While mechanical ventilation is essential for life support, it is associated with significant mortality. There is a lack of data on hospital and 30-day post-discharge mortality rates and related factors for mechanically ventilated patients in Tanzania, particularly at Muhimbili National Hospital (MNH), which serves as a key tertiary-level referral hospital. **Aim:** This study aimed to determine incident hospital mortality and 30-day post-discharge mortality and identify demographic and clinical factors associated with mortality among mechanically ventilated adult patients at MNH. **Methods:** A hospital-based prospective cohort study was conducted in the medical and surgical ICUs at MNH from August 2024 to January 2025. A total of 195 patients who received mechanical ventilation for at least 24 hours were consecutively recruited. Demographic and clinical data were collected, including comorbidities, mechanical ventilation modes, ICU stay, and laboratory results. Patients were followed up daily during their ICU stay and, in the ward, post-ICU discharge. Then, weekly post-discharge from the ward up to 30 days post-ICU discharge. The outcome was all-cause mortality. Factors associated with in-hospital mortality were analyzed using Cox regression. **Results:** The median (IQR) age was 55 (39.00–65.00) years; 62.1% (121/195) were male. Median ICU(IQR) stay was 5 days (3-8), and in the ward post ICU discharge was 2(2-4). Three participants (3/75, 4%) were lost to follow-up, and 8 participants died at home. In-hospital mortality was 61.5% (120/195),

of which 59.5% (116/195) died in the ICU, and 2.0% (4/195) died in the ward. The 30-day post-ICU discharge mortality was 10.7% (8/75), and overall mortality was 65.5% (128/195). Considering the worst-case scenario, in which those lost to follow-up had died, the 30-day and overall mortality was 14.7% (11/75) and 67.2% (131/195), respectively. Stroke (25/120, 20.8) and chronic kidney diseases (18/120, 15%) were the leading causes of hospital mortality. None of the studied patient factors independently predicted mortality. **Conclusion:** Mortality among mechanically ventilated patients at MNH is high, both in-hospital and post-discharge. Mortality may have been influenced by unassessed factors due to methodological constraints. Further studies are recommended to identify determinants of ICU and post-discharge mortality among mechanically ventilated patients at MNH.

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416. Rwezaula, E. (2025). Nurses' and midwives' utilization of the labour care guide and its determinants in monitoring labour in Dar es salaam Region, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Effective labour monitoring is essential for reducing maternal and neonatal complications. The World Health Organization (WHO) introduced the Labour Care Guide (LCG) to address limitations of the previous partograph, such as poor adherence and usability in low-resource settings like Tanzania. Although Tanzania is now integrating the LCG through nationwide training, there is limited evidence on the resulting practices, knowledge, and challenges faced by nurses and midwives. **Objective:** To assess the level of practice and identify associated factors in the utilization of the WHO Labour Care Guide among nurses and midwives for monitoring labour progress in the Dar es Salaam region, Tanzania. **Methods:** An analytical cross-sectional study was conducted across 17 health facilities in Dar es Salaam that had at least ten nurses/midwives actively using the LCG in their maternity units. Data were collected using a standardized questionnaire assessing knowledge, practice, and challenges. Analyses were performed in STATA version 18.5. Descriptive statistics, Chi-square tests, and logistic regression were used to summarize data, test associations, and identify determinants of LCG utilization, with results reported as adjusted prevalence ratios (aPR) and 95% confidence intervals. A p-value <0.05 indicated statistical significance. **Results:** Among 300 participating nurses and midwives, 41.7% had high knowledge of the LCG, 43.7% moderate, and 14.7% poor. Higher knowledge was significantly associated with facility level (p=0.003), LCG training (p=0.047), and the number of training sessions attended (p=0.023). The majority (89.3%) demonstrated adequate LCG practice. Key challenges included high workload (72%), limited access to LCG tools (63%), and inadequate institutional support (82%). Lower LCG utilization was significantly associated with working in health centers versus regional hospitals (p=0.018) and with higher workload (p=0.049). **Conclusion:** While most nurses and midwives demonstrated adequate practice with the WHO LCG, significant barriers, including high workload and disparities linked to facility level, impede

consistent use. Enhancing training, institutional support, and addressing workload are critical to improving LCG implementation and the quality of intrapartum care.

417. Sabina, K. (2025). Experiences of Patients with Cancer During the Transition from Curative to Palliative Care at the Malawi National Cancer Centre. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cancer is a global health concern that increases to cause a burden on health services worldwide. To reduce this burden, the World Health Organization has developed policies for cancer care that includes integrating palliative care into cancer care that has been adopted by countries worldwide. Patients transitioning from curative treatment to palliative care face different experiences that have been attributed to different factors. There has however been limited information regarding the experiences of patients as they are transitioning from curative care to palliative care in Malawi. **Aim:** This study aimed to explore the experiences and perspectives of individuals living with cancer as they were transitioning from curative care to palliative care at the Malawi National Cancer Centre (MNCC). **Methods:** A qualitative study with phenomenological design was conducted at the MNCC from March, 2025 to April, 2025 involving 11 patients with cancer who are on palliative care. the participants were those who were initially on treatment with curative intent but have been transitioned to palliative care for at least 3 months prior to the interview time. The sample of the participants collected utilized purposive sampling technique to target patients with experience in palliative care. data was collected using a semi-structured interview guide where participants were recruited after reviewing the registry records of the MNCC for eligibility. Written consents for participation were obtained from participants. All interviews were recorded and transcribed verbatim. Data was analysed using manual Thematic Analysis (TA) as inspired by Braun and Clarke. **Results:** Four major themes and ten subthemes were developed during analysis on experiences of patients with cancer during their transition from curative to palliative care at the Malawi National Cancer Centre. The themes were navigating the psychological impact of prognostic disclosure, system challenges, socioeconomic challenges as well as coping with the transition impact where patients expressed being depressed with the transition process and then later on accepting the condition. System challenges like reported drug stockouts and institutional gaps were noted during the experience, while other patients experienced socioeconomic challenges like financial hardships and unmet expectations and coping with the impact of transition was through family support systems, support from health care workers as well s spiritual related coping. **Conclusion:** The transition from curative care to palliative care is a complex life-changing journey that is irreversible for patients with cancer. The journey has been shaped by emotional acceptance of transition by many patients, system challenges and socioeconomic challenges, where many patients have confessed this journey as a contrary expectation. These challenges highlight a need for improved and holistic palliative care systems in Malawi to ensure a supported transition for patients.

418. Sachedina, S. S. (2025). Visual outcome of pediatric cataract surgery at selected tertiary eye units in Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Pediatric cataract is a leading cause of preventable childhood blindness, accounting for 5%-20% of visual impairment worldwide. Treatment includes surgery and visual rehabilitation. Despite advances in surgical techniques, achieving a favorable outcome is a challenge. Furthermore, data on the outcome of traumatic cataract remains limited in our setting. This study assesses the surgical outcome of pediatric traumatic and non-traumatic cataract and associated factors. Knowing the visual outcome of pediatric cataract is crucial for setting targeted interventions in order to achieve good vision and hence improve the quality of life of the affected children. **Aim:** To determine the visual outcome, refractive status, surgical complications, and the factors associated with poor visual outcome after cataract surgery among pediatric patients operated at Muhimbili National Hospital, Comprehensive Community-Based Rehabilitation Tanzania, and Mnazi Mmoja hospitals in Tanzania. **Methodology:** A hospital-based prospective longitudinal observational study was conducted at selected tertiary eye units in Tanzania from May 2024 to March 2025. All newly admitted patients below 18 years of age with cataract planned for cataract surgery with primary IOL implantation were enrolled in the study. A consecutive sampling method was used to recruit participants. Demographic data was collected from the caregivers, ocular examination findings before and after cataract surgery for all patients was performed and recorded in the questionnaire. Participants were followed up and the final visual outcome was recorded at 12 weeks after surgery. The data analysis utilized Stata version 17.0, with results reported as frequencies for categorical data and means for continuous variables. Associations between dependent and independent variables were assessed through Chi-square, Fisher's exact, and Modified Poisson regression tests, considering p-values <0.05 as statistically significant. **Results:** A total of 126 patients (167 eyes) were analyzed. The mean age at presentation was 76.02 ± 44.23 months. Traumatic cataract accounted for 49 (29.40%) eyes. Best Corrected Visual Acuity >6/18 was present in 58% of eyes 12 weeks post-surgery. Mean change in visual acuity before and after cataract surgery was 0.80 +0.75 (p<0.001). Refractive error was present in (152, 91%) of eyes. Factors associated with poor visual outcome included >3 hours' drive to the facility (aPR=1.525, CI: 1.150-2.023, p=0.003), lag time >3 months (aPR=1.732, CI:1.067-2.810, p=0.026), persistence of strabismus (aPR: 2.847, CI:1.046-7.746¬, p=0.002), persistence of nystagmus (aPR: 3.401, CI: 2.069-5.591¬, p=0.001), non-traumatic cataracts (aPR=1.504, CI:1.999-2.264, p=0.018), nuclear cataract (aPR: 5.053, CI: 1.563-16.332 ¬, p=0.007), myopia after surgery (aPR: 1.802 , CI: 1.221-2.661 ¬, p=0.003), high post-operative intraocular pressure (aPR=2.709, CI: 1.711-10.324, p=0.001) and amblyopia (aPR=3.708, CI:1.865-7.373, p=0.001). Horizontal cornea diameter of > 11mm (aPR: 0.623, CI: 0.443-0.875 ¬, p=0.006) and axial length >22mm (aPR: 0.637, CI: 0.458-0.886 ¬, p=0.007) were less likely to be associated with poor visual outcome. **Conclusion:** More than half of the eyes had good visual outcome and the mean improvement in Best Corrected Visual Acuity after cataract surgery was statistically significant. About 9 in 10 eyes had refractive error at 12 weeks after surgery. Approximately 5, out of 100 eyes operated, presented with surgical complications. More than 3 hours' drive to reach the facility, lag time >3 months, persistence of strabismus and nystagmus, small HCD <11mm, short AL <22mm, non-traumatic cataract, nuclear morphology, myopia after surgery, amblyopia and raised intraocular pressure after surgery were significantly associated with poor visual outcome. **Recommendation:** Optimization of visual outcomes through rigorous pre-

operative assessment and comprehensive patient education to ensure adherence. Reinforcement of timely refraction and optical correction is necessary. Appropriate follow up schedule to detect surgical complications and manage accordingly. Strengthen community awareness on early presentation. Appropriate amblyopia management by prioritizing patching.

419. Saeed, R. M. (2025). Functional and radiological outcomes of length-unstable pediatric femur fractures treated with flexible intramedullary nail at Muhimbili Orthopedic Institute. Muhimbili university of health and Allied Sciences.

Abstract

Background: Pediatric femur fractures constitute approximately 1.6% of all pediatric fractures and present a significant clinical challenge, particularly when classified as length-unstable. These fractures are prone to angulation and shortening, often necessitating surgical fixation. Flexible intramedullary nailing (IMN) has gained popularity for managing such fractures due to its minimally invasive nature and favorable outcomes. However, limited data exists regarding the functional and radiological outcomes of length-unstable femur fractures treated with flexible IMN, particularly in low-resource settings like Tanzania. Objective: This study aimed to assess the functional and radiological outcomes of length-unstable pediatric femur fractures treated with flexible intramedullary nails at Muhimbili Orthopedic Institute (MOI). **Methods:** A cross-sectional study was conducted at MOI involving 27 pediatric patients aged 6 to 12 years who underwent flexible intramedullary nailing for length-unstable femur fractures between June 2023 and June 2024. Functional outcomes were assessed using the Flynn TEN scoring system, while radiological union was evaluated using the Anthony Grading System. Data were analyzed using SPSS version 25. Chi-square tests were employed for categorical variables. A p-value of <0.05 was considered statistically significant. **Results:** Among the 27 patients included in the study, the majority were aged 8–10 years (44%) and female (52%). The most common mechanism of injury was motor traffic crashes (52%). Comminuted fractures accounted for 48% of cases, with the middle third of the femoral shaft being the most affected region (74%). Functional outcomes were rated as excellent in 67% of cases and satisfactory in 29%, with only one case (4%) rated as poor. Radiologically, 82% of fractures achieved Grade 3 union according to the Anthony Grading System. **Conclusion:** Flexible intramedullary nailing (FIN) demonstrated excellent functional and radiological outcomes in managing length-unstable pediatric femoral shaft fractures at Muhimbili Orthopedic Institute. Most patients were aged 8–10 years, with motor traffic crashes as the main cause and comminuted mid-shaft fractures being most common. Eighty-five percent achieved excellent or satisfactory functional results, and 82% showed Grade 3 union radiologically. No reoperations or major complications occurred, confirming FIN as a safe and effective option for selected pediatric cases. These findings support the continued use of flexible IMN in selected cases of length-unstable fractures. Further research with larger sample sizes is recommended to validate these findings.

420. Sago, K. S. (2025). CT Imaging Findings and Predictors of Aspects in Stroke Patients at A National Hospital in Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Stroke is the second major cause of death and third-leading disability worldwide. The Alberta Stroke Program Early CT Score (ASPECTS) measures non-contrast brain CT ischemic changes. For parenteral blood thinner-treated acute ischemic stroke and cerebral hemorrhage patients, it predicts functional outcomes. This study seeks to uncover neuroimaging CT findings and ASPECT score predictors in acute ischemic stroke patients. The study aimed at determining CT imaging findings and predictors of ASPECT score in acute ischaemic stroke patients. **Objective:** "To determine CT imaging findings and predictors of ASPECT scores in acute ischemic stroke patients at the National Hospital in Tanzania. **"Methodology:** This was a prospective cross-sectional study conducted at the National Hospital in Tanzania from October 2024 to March 2025. One hundred and seventy- two (172) patients with acute stroke who underwent brain CT scan were recruited. Version 23 of SPSS was used for the statistical analysis. "Categorical variables were analyzed using Chi-square tests". Multiple regression was used to analyse predictors of the ASPECTS score. A significance level was below 0.05. **Results:** The study comprised participants with an average age of 57.28 (±10.34) years, ranging from 31 to 87 years. The distribution of age groups was as follows: the largest cohort (47.1%) was between 50 and 65 years old, 29.1% were under 50 years, and 23.8% were over 65 years. Females constituted a slight majority of the participants at 52.3%, with males making up the remaining 47.7%. Regarding the Alberta Stroke Program Early CT score, a significant proportion of patients (78.5%) presented with a score below 7, indicating early ischemic changes. The mean ASPECT score observed in this study was 5.39 (±1.16). Forty percent (40.1%) of stroke patients sought imaging between one and seven days after symptom onset, whereas only 2.3% arrived within the critical three-hour window following the onset of stroke symptoms. Hypertension (OR=0.036 95% CI = -0.187-0.291, p =0.669) Diabetes mellitus (OR=-0.029 95% CI = -0.166-0.115, p =0.719), Cigar rete smoking (OR =vi 0.159 95% CI = -0.003-0.368,p = 0.054), Family history of stroke (OR = -0.116 95% CI = -0.248-0.040, p =0.156), location of infarct (OR=0.157 95% CI = -0.001-0.141, p =0.053) and Distance to the receiving referral hospital (OR=-0.033 95% CI =-0.127-0.082, p =0.673) did not demonstrate significant effect on the ASPECT Score. **Conclusion and recommendations:** This study highlights key demographic and clinical characteristics of stroke patients, emphasizing the need for targeted prevention efforts for middle-aged and older adults, particularly women. The high proportion of severe stroke (ASPECT score < 7) and the alarmingly low percentage of patients seeking imaging within the critical three-hour window underscore the importance of public education on recognizing stroke symptoms and seeking timely care. The lack of significant associations between ASPECT scores and common risk factors suggests the need to explore other variables influencing stroke outcomes. Future research should focus on these factors and strategies to improve stroke prevention and timely intervention. There is a need to standardize CT reporting using the ASPECT score to guide treatment and prognosis.

421. Said, S.A. (2025). Prevalence, clinical profile, and complications of preauricular sinuses among patients attending Otorhinolaryngology clinic at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Preauricular sinus (PAS) is a congenital anomaly present in a noticeable proportion of the population, with a prevalence ranging from 4% to 9.3% in Africa. The sinus may complicate into a recurrent infection or a preauricular abscess if improperly treated. There is scarcity of data in Tanzania on the burden of PAS. This study aimed to fill the knowledge gap, bring public awareness, and improve the treatment of preauricular sinus complications. **Objective:** To determine the prevalence, clinical profile and complications of preauricular sinuses among patients attending Otorhinolaryngology clinic at Muhimbili National Hospital. **Methodology:** A hospital-based cross-sectional study was conducted at the Otorhinolaryngology (ORL) clinic of Muhimbili National Hospital between September and December 2024. Participants aged 8 months to 90 years were recruited using a systematic random sampling method. Data were collected through structured data collection forms and analyzed using SPSS version 27, with statistical significance set at $p < 0.05$. **Results:** Out of 810 participants enrolled, with a median age of 33 years (IQR: 9–49), females constituted 51.2% and males 48.8%. PAS was identified in 29 (3.6%) participants. The condition was slightly more frequent among females 17(4.1%) compared to males 12(3.0%). Right-sided PAS was common in 14(48.3%). Preauricular discharge was the most common presentation across all age groups and sexes by 11(36.7%). Among the 34 PAS, 11 (32.4%) developed complications, while 23(67.6%) were asymptomatic. **Conclusion**: Preauricular sinus is still a rare congenital anomaly, the majority of participants were asymptomatic, but a considerable proportion developed complications. Preauricular discharge was the leading presentation. **Recommendation:** A thorough ORL examination should be offered to all patients, irrespective of their complaints. Counseling patients with PAS regarding symptoms and complications to enhance awareness and encourage early care. Further studies are required to explore awareness and knowledge about PAS in Tanzania.

422. Said, Z.K. (2025). Assessment of the availability of rehabilitation services and information generation in the public hospital of the Pwani region. Muhimbili University of Health and Allied Science

Abstract

Introduction: The emerging demographic and health shifts are contributing to a rapid increase in the number of people experiencing disability or declines in functioning for substantially long periods of their lives. The demand is expected to increase due to the prevalence of chronic non-communicable diseases and high number of people living with the consequences of injury and developmental disability. In Tanzania 20% (10 million) of the population has a health condition that will benefit from rehabilitation services. Despite the intervention of the implementation of National Rehabilitation Strategic Plan most of the rural population cannot access rehabilitation services from their readily accessible facilities. **Objectives:** To assess the availability of rehabilitation services and information generation in public hospitals of Pwani region.

Methodology: An exploratory qualitative case study was conducted in public hospital of Pwani region. A purposive sampling technique was used to select and recruit 20 participants from three facilities: Mkuranga District Hospital, Mafia District Hospital, and Tumbi Referral Hospital. Study participants were healthcare providers working in rehabilitation unit for at least three years. In-depth interviews, observation and desk review were used to capture data on the availability of rehabilitation services and information generation in the public hospital of Pwani. Data were analysed with the assistance of NVIVO software based on an inductive thematic analysis approach. **Results:** A total of 20 healthcare providers from three facilities representing urban, semi urban, and rural contexts revealed significant gaps in the availability of rehab services, where the key challenges include inadequate infrastructure, critical shortage of Assistive Technology (AT) and rehab supplies, shortage of HRH, and limited multidisciplinary workforce. Rehabilitation was often under prioritized in health planning, with the national health information system also under-prioritized, resulting in limited data for decision-making. **Conclusion:** Rehabilitation services in Pwani Region are limited, with rural and semi-rural hospitals facing shortages of skilled personnel, inadequate infrastructure, and a lack of essential assistive devices. They lack dedicated rehab units and standardized data collection tools, which hinder effective service delivery. Strengthening human resource allocation, investing in infrastructure and equipment, and integrating standardized tools are key priorities to improve availability.

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423. Saidi, R. (2025). Prevalence, clinical characteristics, angiographic patterns, and factors associated with acute coronary syndrome among patients attending the chest pain unit at Jakaya Kikwete Cardiac Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cardiovascular diseases (CVD) are the leading cause of morbidity and mortality globally, accounting for 31% of global deaths. Most cardiovascular-related deaths occur in low and middle-income countries. Acute coronary syndrome (ACS) accounts for most CVD deaths. Existing data on ACS in Tanzania has largely been from retrospective studies that did not examine the angiographic profile of patients undergoing coronary angiography (CAG) at a specialized chest pain clinic. **Objective:** We aimed to determine prevalence, clinical characteristics, angiographic patterns, and factors associated with acute coronary syndrome among patients attending chest pain unit at JKCI. **Methodology:** This was a hospital-based observational cross-sectional study conducted at JKCI for a period of six months from September 2024 to February 2025. The study included patients presenting with chest pain, with a sample size of 166. Consecutive enrolment techniques were employed, and data collected included patients' socio-demographic and clinical characteristics, pertinent diagnostic tests, and angiographic profiles. Data were summarized using appropriate descriptive statistics for continuous and categorical variables. Multivariable modified poison regression analysis was used to identify independent factors associated with ACS, and a p-value of <0.05 was considered statistically significant. **Results:** Among the 166 patients enrolled, the median (IQR) age was 61 (51-69) years, where more than half were men (62.7%). The chest pain was cardiac in 57.2% with a median (IQR) time of chest pain onset to presentation being 24(18-39) hours. The prevalence of ACS in this group of patients presenting with chest pain at chest pain unit was 65.7%. Among those who underwent CAG, 93.6% had obstructive coronary

artery disease (OCAD). The most common pattern of coronary artery involvement was the left anterior descending artery (LAD), 73.4% and single vessel disease (SVD), 48.8%. Three factors: hypertension (aPR= 2.35; 95% CI: 1.38-4.01, p=0.002), diabetes mellitus (aPR=1.5; 95% CI: 1.20-1.90, p=<0.001), and dyslipidaemia (aPR=1.72; 95%CI: 1.35-2.20, p=<0.001) were independently associated with ACS. **Conclusion and Recommendation:** Among patients presenting with chest pain at the chest pain unit of a tertiary cardiac center in Tanzania, the prevalence of acute coronary syndrome (ACS) was high, with the left anterior descending (LAD) artery being the most affected vessel. Conventional cardiovascular risk factors were found to be strongly associated with ACS, with a significant delay in reporting to the clinic after the onset of chest pain. Our findings highlight the critical need for public health initiatives to control CVD/ACS's risk factors, improve public awareness of cardiovascular disease, and develop systems of care for patients with chest pain. Future multicenter or longitudinal studies should be conducted to enhance the generalizability of the findings.

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424. Salum, K. R. (2025). The prevalence of burnout and associated factors among nurses in intensive care units at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Burnout among nurses in intensive care units is a syndrome resulting from chronic unmanageable workplace stress (WHO). It is a common global crisis among individuals who work in high-stress environments. Studies on burnout among nurses in the Intensive Care Units (ICUs) at Muhimbili National Hospital are rare. **Objective:** To assess the prevalence of burnout and associated factors among nurses in ICUs at Muhimbili National Hospital. Method: A quantitative, analytical, cross-sectional study was conducted among 221 nurses in the Intensive Care Units of Muhimbili National Hospital, utilizing structured questionnaires. The Maslach Burnout Inventory (MBI) tool was used to determine the prevalence, and the data were analyzed using SPSS Version 25. The association between burnout and associated factors was determined by Logistic regression analysis (P-value ≤ 0.2 in bivariate analysis), and a Multivariate regression model (P-value < 0.05) was used as the criterion for statistical significance of the association. **Results:** Among the 221 participants involved, the majority were female nurses (129, 58.4%), with 104 having a diploma (47.1%). Overall burnout prevalence was high 155(70.1%. CI 70.0 – 85.1) and was higher among female 91(58.7%). The factors significantly associated with burnout include double shifts within a week (AOR = 2.24, CI;1.09-4.58, P-value = 0.03), having no other source of income (AOR = 2.28, CI;1.06-4.92, P-value = 0.04), inadequate staff (AOR = 2.45, CI = 1.04-5.75, P-value = 0.04) and high burden of work (AOR =2.65, CI = 1.25-5.58, P-value = 0.011). **Conclusion:** The high prevalence of burnout among nurses in Intensive Care Units at MNH is concerning and requires attention. Addressing associated factors, such as a higher patient-to-nurse ratio and longer working hours, ultimately worsens burnout. The availability of assistive devices for lifting patients may be beneficial, but the working environment needs to be assessed.
Keywords: Burnout, Intensive Care Unit nurses, Prevalence, Workload (double shifts / long hours), Staffing shortage.

425. Salum, M.K. (2025). Factors Influencing Nutrition Dietary Plan Compliance among diabetic type 2 patients at Mnazi Mmoja Hospital, Zanzibar. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Diabetes mellitus is a chronic condition affecting 537 million adults globally, with numbers projected to rise significantly, particularly in Sub-Saharan Africa, where cases are expected to more than double by 2045. In Tanzania, approximately 10.3% of adults have diabetes, and adherence to dietary plans, a cornerstone of diabetes management, remains suboptimal, with non-adherence rates in Africa ranging from 20% to 70%. Socioeconomic challenges, cultural dietary preferences, and low knowledge levels contribute to poor adherence, yet limited research exists on these issues in Zanzibar. This study explores knowledge, adherence rates, and factors influencing adherence to diabetic dietary plans in Zanzibar to guide tailored interventions. **Main Objective:** To determine factors influencing diabetic dietary plan compliance, among diabetic patients attending the diabetic clinic at Mnazi Mmoja Hospital (MMH). **Method:** An analytical cross-sectional study design was used. A sample of 130 participants was recruited among patients attending the Mnazi Mmoja Hospital diabetic clinic in Zanzibar. Statistical analysis was performed using SPSS version 27, with descriptive and inferential methods to identify significant factors associated with compliance at a p-value <0.05. **Results:** The study involved 122 participants and revealed that 60.7% demonstrated poor compliance. Key challenges included forgetting to plan meals (54.1%), skipping dietary planning in the past 24 hours (53.3%), and deviating from the diet when feeling better (55.7%). Compliance was significantly higher among participants with a monthly income above 500,000 Tanzanian Shillings (AOR=1.699, 95% CI: 1.023–2.822, p=0.040) and those who ate outside food less frequently (AOR=0.440, 95% CI: 0.265–0.729, p=0.001). These findings underscore the need for targeted nutrition education and interventions to promote dietary adherence. **Conclusion:** The study revealed inadequate nutrition knowledge and poor dietary compliance. Income level and frequency of consuming outside food significantly influence adherence. These findings highlight the urgent need for structured nutrition education and behavior-focused interventions to improve dietary management in diabetes care.

426. Salumu, N. (2025). Evaluation of implementation of the Community Score Card (CSC) in improving maternal health care services at Itilima District in Simiyu. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Maternal health care remains a critical public health issue in Tanzania, particularly in rural districts like Itilima in Simiyu Region. To address challenges such as poor service quality, limited accountability, and inadequate community involvement, the Community Scorecard (CSC) approach was introduced. This study evaluates the implementation of the CSC in improving maternal health care services in Itilima District. **Methodology:** A qualitative cross-sectional study was conducted between March and April 2025. Data were collected through focus group discussions and key informant interviews with 43 participants (5 CHMT members, 28 women of reproductive age, and 10 healthcare providers). Thematic analysis generated nine themes related to

accountability, communication, service quality, and community empowerment. **Results:** The CSC contributed to improvements in maternal health service delivery. Service users reported higher satisfaction, while providers noted enhanced communication and accountability. Communities highlighted increased awareness and empowerment in demanding better services **Conclusion and Recommendations:** The CSC proved to be an effective tool in enhancing community participation, accountability, and maternal health service delivery in Itilima District. The approach fostered dialogue between service providers and users, leading to practical changes in care practices. **Recommendations:** Scale up the CSC to other districts in the Simiyu Region. Provide ongoing training for CSC facilitators. Integrate CSC findings into district health planning and budgeting. Establish monitoring mechanisms to sustain improvements.

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427. Samky, M.E. (2025). Factors leading to delay in definitive treatment and early functional outcome of floating knee injuries treated at Muhimbili Orthopedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Ipsilateral fractures of the femur and tibia, known as floating knee injuries, can involve diaphyseal, metaphyseal, and intraarticular fractures. Such injuries typically result from high-energy trauma and are often accompanied by injuries to other body areas. Comprehensive evaluation and management are crucial for favorable prognoses and functional outcomes in affected patients, particularly in resource-limited settings where delays in definitive surgical treatment can be prolonged.**Aim of Study:** This study aimed to identify factors contributing to delays in definitive treatment for floating knee injuries at the Muhimbili Orthopaedic Institute and to evaluate the early functional outcomes for these patients.**Material and Methodology:** The descriptive prospective study, conducted from July 2024 to December 2024, included all patients with floating knee injuries attending the Muhimbili Orthopaedic Institute. A total of 43 patients were analyzed based on demographics, injury mechanisms, clinical and radiological presentations, and associated injuries. Follow-up evaluations were performed over 12 weeks using the Karlström and Olerud criteria. Univariable analyses using Modified Poisson Regression estimated crude relative risks, with significant factors ($p < 0.05$) entering multivariable analysis for adjusted risks. **Results:** The average age of patients with floating knee injuries was 33 years, predominantly male (86%). The primary cause of injury was motorcycle-related traffic accidents (97.7%). The right knee was affected more frequently (76.7%), with Fraser I fractures being the most common (60.5%). Closed injuries constituted 46.5%, and Gustilo-Anderson I and II injuries were observed in 39.1%. Approximately 81.4% of patients faced delays in definitive treatment, with a mean delay of 38 days. Significant factors contributing to treatment delays included open fractures of Gustilo-Anderson grades II and III, wound infections, associated injuries, low hemoglobin levels, and financial constraints. **Conclusion:** Most floating knee injury patients were males of working age, with a prevalence of closed injuries and associated injuries. A significant majority (81.4%) experienced delays in definitive treatment, with Gustilo-Anderson grades II and III, wound infections, hemoglobin levels, and financial issues being notable contributing factors.

428. Samwel, R. (2025). Psychological distress among adolescents living with HIV/AIDS at Amana Regional Referral Hospital, Dar es Salaam, Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Psychological Distress (PD) impacts health and well-being. It is a significant public health concern worldwide among adolescents living with HIV (ALHIV). PD has been linked to poor health outcomes and reduced academic performance among ALHIV. Despite the previous studies that revealed the high prevalence of psychological distress and associated factors globally, in Tanzania, little is known about the prevalence and factors associated with psychological distress in this population. **Objectives:** This study aims to determine the prevalence of psychological distress and associated factors among ALHIV attending a care treatment clinic at Amana Regional Referral Hospital in Dar es Salaam. **Materials and Methodology:** We conducted a hospital-based cross-sectional study involving ALHIV attending CTC in Amana Hospital, Dar es Salaam. A sample size of 273 adolescents was enrolled in the study through a simple random sampling, and data were collected from April to May 2025. PD was measured using the Kessler-10. Questionnaires used to collect data included sociodemographic and clinical characteristics, HIV-related stigma, and social support. All variables associated with psychological distress with $p<0.2$ in bivariable analysis were analysed using multivariable regression analysis, and variables with $p<0.05$ were considered statistically significant with psychological distress. Results: The prevalence of PD among ALHIV at ARRH was 56.8%. Having primary school education (aOR=2.74, 95% CI=1.60-4.70, p=0.0001), use of substance (aOR=2.39, 95% CI=1.14-5.02, p=0.021) and experiencing moderate to severe HIV-related stigma (aOR=7.31, 95% CI=2.31-23.14, p=0.001) was statistically significantly associated with PD. **Conclusions and Recommendations:** PD is high among ALHIV associated with primary school level of education, use of substance, and moderate to severe HIV-related stigma. It is recommended that routine mental health screening and intervention be integrated into CTCs for ALHIV; targeted healthy education, and life-skills programs should be developed for ALHIV with primary level of education; substance use screening and evidence -based intervention, such as counselling and motivational interviewing, should be provided; while comprehensive stigma reduction initiatives are essential.

429. Sanga, H. (2025). Hyperglycaemia among patients on dolutegravir based anti-retroviral therapy at Muhimbili National Hospital, Tanzania: prevalence and associated factors. **Muhimbili University of Health and Allied Sciences.**

Abstract

Background: Dolutegravir (DTG), a second-generation integrase strand transfer inhibitor for the treatment of human immunodeficiency virus (HIV) infection, is renowned for its potent efficacy, minimal side effects, high resistance barrier, and broad spectrum of effectiveness. Nevertheless, its potential to trigger hyperglycemia and cause weight gain, hepatotoxicity, insomnia, nausea, and vomiting is unclear. The extent to which dolutegravir contributes to hyperglycemia and the factors related to hyperglycemia in Tanzanian patients with HIV remain uncertain. **Objectives:** To

determine the prevalence and associated factors of hyperglycemia among patients receiving dolutegravir-based antiretroviral therapy at Muhimbili National Hospital (MNH). **Methodology:** This cross-sectional study was conducted at the MNH HIV Care and Treatment Clinic. We recruited consenting HIV-infected patients aged 18 years or older on dolutegravir-based therapy for at least three months. Sociodemographic and clinical data were recorded, and fasting blood glucose levels were measured. Known diabetic patients were additionally assessed for diabetes control via HbA1c test results obtained in the past three months. The data were analysed via SPSS version 27.0, which employs chi-square tests and logistic regression models to identify associations, with significance set at $p<0.05$. **Results:** A total of 380 participants were enrolled; 69.7% were female, and 8.4% had known diabetes. The mean age was 48.9 ±11.6 years, and 93.7% of the participants had undetectable viral loads. The prevalence of hyperglycemia was 15% (57/380). The factors significantly associated with hyperglycemia included pre-existing hypertension (aOR (95% CI) = 2.73 (1.30–5.75)) and hypertension (aOR C95% CI)2.04(1.05-0.3.95)) **Conclusion:** Hyperglycemia was high among PLHIV on dolutegravir and was associated with hypertension and pre-existing hypertension. There was no comparable difference in the prevalence of hyperglycemia between the DTG-based regimen and the non-DTG-based regimen in the historical control group.

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430. Sango, S.P. (2025). Predictors of pregnancy associated venous thromboembolism and clinical phenotypes of pa-vte cases at Muhimbili national hospital in Dar es salaam Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: The risk for venous thromboembolism increases with pregnancy and further exacerbated by other pre-existing risk factors, pregnancy and delivery complication also transient risk factors. However not all pregnant and postpartum women require prophylaxis for VTE, required to only those with high risk of VTE. The risk stratification tools available were created based on data from predominantly western population. There is paucity of data on predictors of pregnancy associated VTE in Tanzania also clinical of phenotypes of PA-VTE cases in Tanzania are underreported. Aim: To determine predictors for pregnancy associated venous and describe clinical phenotypes of PA-VTE cases at MNH in Dar es salaam Tanzania. **Material & methods:** We conducted a retrospective case-control study at Muhimbili National Hospital from 2016 to 2024. Cases were pregnant or postpartum women (≤6 weeks) with objectively confirmed VTE. Cases were matched to control 1:2 based on age of case ±5 years on similar pregnancy period (prepartum or postpartum) also admitted at MNH obstetric wards during the same week as a matched case. Conditional logistic regression was used to determine predictors of PA-VTE, furthermore clinical phenotypes of PA-VTE cases were characterized descriptively. **Results:** Of the 321 women included (107 cases, 214 controls), predictors of PA-VTE were Gross varicose vein (aOR: 18.47, 95% CI: 7.75 – 43.98, $p <0.001$), systemic infection (aOR: 6.58, 95% CI: 2.63 – 16.48, $p < 0.001$), cesarean section delivery (aOR: 5.38, 95% CI: 2.32 – 12.48, $p <0.001$), stillbirth (aOR: 4.42, 95% CI: 1.45 – 13.72, $p = 0.009$) and medical comorbidities (aOR: 3.76, 95% CI: 1.54 – 9.19, $p = 0.004$). DVT accounted for 72.9% of cases, predominantly proximal DVT 70.6% but also left lower limb was commonly affected. Pulmonary embolism was sub massive or massive in

over one-third of cases. Moreover, these VTE events occurred predominantly during postpartum period. **Conclusion:** The predictors of PA-VTE identified in this population include gross varicose vein, current systemic infection, cesarean section delivery, stillbirth and medical comorbidities. There is predominance of life-threatening clinical phenotypes of VTE with most events occurring during postpartum period. These findings underscore urgent gaps in Tanzania VTE risk assessment and preventive care. Locally adapted guidelines and implementation strategies are urgently needed.

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431. Sangu, R.P. (2025). Factors associated with Insecticide Treated Net use among children under 5 years in Ngara district council. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Malaria remains a major public health issue in Tanzania's Kagera region, particularly in Ngara district, where environmental factors favor high transmission rates. Despite widespread distribution of insecticide-treated nets (ITNs), gaps between ownership and consistent usage hinder malaria prevention efforts. Addressing socio-demographic, psychosocial, household and net factors influencing ITN usage for under five years children is critical for reducing malaria cases. This study aimed to determine factors influencing insecticide-treated net (ITN) usage among children under five years in Ngara district, Kagera region, Tanzania. **Methodology**: A mixed-methods study design was employed, combining a cross-sectional study for the quantitative component and a phenomenological design for the qualitative component conducted in Ngara district targeting children under five in households with at least one ITN. A total of 461 children were included in the quantitative analysis, and 25 caregivers participated in qualitative interviews. Multistage and purposive sampling methods were used. Data were collected using questionnaires and in-depth interview guides. Quantitative data were analyzed using descriptive statistics and modified Poisson regression, with $p < 0.05$ considered statistically significant. Thematic analysis was applied to qualitative data. Results The study included 382 households with 461 children. Among the children, 75.1% slept under an ITN the night before the survey. Usage was slightly higher (75.6%) among male children and highest (90.6%) among those aged 13–23 months. Children whose caregivers also used ITNs were more than twice as likely to use them (adjusted prevalence ratio = 2.35; 95% CI: 1.80 3.08; $p < 0.001$). Higher caregiver education (secondary level or above) was significantly associated with increased ITN use (adjusted prevalence ratio = 1.25; 95% CI: 1.02–1.54; $p = 0.03$). Qualitative **findings:** revealed key themes as barriers to ITN use, cultural beliefs and misconceptions, challenges in accessing mosquito nets and perceptions of net effectiveness, all of which influenced ITN use among children under five. **Conclusion:** Nearly one in four children under five did not sleep under an insecticide-treated net (ITN) the night before the survey. Usage was significantly higher among children whose caregivers also used ITNs, and caregiver education played a critical role as those with formal education were more likely to ensure consistent use. Barriers to optimal usage included cultural misconceptions and systemic challenges in net distribution. The National Malaria Control Program should implement targeted education campaigns to address these misconceptions, particularly in underserved and remote areas. Health facilities should also ensure fair and transparent distribution of nets, supported by effective follow-

up systems to resolve community-level challenges.

432. Sanya, A. (2025). Cost-effectiveness of centralized incineration system in healthcare waste management among urban healthcare facilities in Shinyanga municipal council. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Healthcare waste management is a critical issue due to the potential health risks and environmental hazards associated with improper disposal. Approximately 15% - 25% of healthcare waste is considered hazardous, requiring specialized treatment (WHO, 2018). The improper disposal of healthcare waste can lead to disease transmission, environmental contamination, and significant legal ramifications for healthcare providers. Various waste management methods have been explored, including burning Chamber and incineration. Centralized incineration has gained attention as a viable option for managing hazardous healthcare waste. This method offers several advantages, including significant volume reduction and effective pathogen elimination. Studies have shown that centralized systems can be more efficient compared to decentralized approaches, especially in urban settings where waste volumes are higher. **Study Objective:** To assess the cost-effectiveness of a centralized incineration system for healthcare waste management in urban healthcare facilities within Shinyanga Municipal Council. **Methodology:** An analytical cross – sectional study was done to compare cost and effectiveness of centralized incineration to decentralized system at health facilities. Eight healthcare facilities were conveniently sampled, these had previously used decentralized system but now adopted to centralized incineration system. The study was done from provider perspective based on one-year time horizon from January to December 2024. Incremental cost-effectiveness analysis was calculated. One-way sensitivity analysis was performed by changing ± 10% each of the cost driver variables at a time. Such variables are as capital investment of the incinerator, operational and maintenance, cost of infectious waste transportation, and waste incineration efficiency. **Results:** The total annual cost of operating a centralized incineration system in Shinyanga Municipal Council was estimated per facility per year where facility E and H had the lowest (TZS 2,625,060/=) and highest (TZS 28, 531,875/=.) total cost respectively while the decentralized system implemented was high (TZS 21,281,875.) for facility H (Songambele Dispensary) and low TZS 3,204,000 for facility F (Uhuru Dispensary). Effectiveness of centralized incineration was measured and found to be high for facility H (Songambele Dispensary) (5824kg/year) and low for facility E (Mitimirefu Dispensary) (520kg/year). While effectiveness of decentralized system was high (1,248kg/year) and low (265kg/year) for facility H (Songambele dispensary) and E (Mitimirefu Dispensary) respectively. Based on the results, Decentralized incineration system was dominated by centralized system since the ICER were negative value and the centralized system was more cost effective than decentralized system. **Conclusion:** Through a comparative analysis, it was found that centralized incineration is less costly as compared to decentralized while consistently demonstrated higher effectiveness in terms of volume of infectious waste safely incinerated. **Recommendations:** Implementing a centralized incineration system will enhance operational efficiency; reduce duplication of infrastructure and maintenance costs. Therefore, local government authorities and healthcare facility managers should prioritize investment in

centralized incineration infrastructure as a viable and more cost-effective waste management approach for urban areas.

433. Sayango, K.G. (2025). Art adherence and associated factors among adolescents living with HIV a retrospective analysis in Ubungo municipal council, Tanzania. Muhimbili University of Health and Allied Sciences

Abstract

Background: Adherence to Antiretroviral Therapy (ART) among adolescents living with HIV/AIDS was a critical yet challenging aspect of HIV care, especially in resource-limited settings like Ubungo Municipal Council, Tanzania. Despite the availability of ART services, adherence rates among adolescents remained suboptimal due to various barriers. **Objectives**: The broad objective of the study was to assess the level of adherence to ART and associated factors among adolescents in Ubungo Municipal Council, Tanzania. **Methodology:** The study was conducted in Ubungo Municipal Council across 31 MDH supported health facilities. It employed a cohort retrospective analysis, utilizing secondary data from the medical records of adolescents aged 10-19 years receiving ART. The sample size was estimated using a power calculation to achieve a power of 80%. Descriptive analysis was employed to analyze the level of ART adherence and logistic regression analysis was conducted to assess association between adherence levels and other clinical and demographic factors such as age, sex, baseline CD4 test and WHO staging. **Findings:** The study findings reveal that 70% of adolescents living with HIV demonstrate good adherence to antiretroviral therapy (ART), while 30% exhibit poor adherence. Statistical analysis shows that neither age nor sex significantly influences ART adherence among the adolescents. However, baseline CD4 count emerged as a significant factor with adolescents having a baseline CD4 count greater than 500 cells/mm^3 being more likely to adhere to ART. **Conclusion:** This study highlights the importance of monitoring CD4 levels and other clinical factors to improve ART adherence among adolescents in Tanzania, suggesting that other unmeasured factors may be influencing adherence. Further research is needed to explore these factors in depth and develop targeted interventions to improve outcomes for adolescents living with HIV.

434. Scola, B.M. (2025). Peripheral Arterial, Neuronal Function and Glucose Tolerance Among Young Black African Women Stratified by BMI, Waist Circumference and Body Fat Percentage. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Obesity ranks among the top health problems that are closely linked to the rising burden of non-communicable diseases (NCDs). It is a common risk factor for all NCDs, including type 2 diabetes (T2DM). Impaired peripheral arterial and nervous function is common in T2DM and plays a crucial role in the pathogenesis of diabetes complications. Because obesity and overweight are the main risk factors for T2DM, this study hypothesized that peripheral arterial and nervous dysfunction occur early in overweight/obesity before diabetes develops. Few studies have investigated these dysfunctions in overweight/obesity. **Aim:** To assess peripheral arterial, neuronal function, and glucose tolerance among young black African women stratified by Body Mass Index

BMI, waist circumference, and body fat percentage as a measure of overweight and obesity. **Methodology:** The study involved 90 participants categorized who were stratified by BMI, waist circumference (WC) and body fat percentage as overweight/obese and non-overweight/obese. Peripheral arterial function was assessed using an automated device to measure ankle brachial index (ABI) and toe brachial index (TBI), while neuronal function was evaluated using vibration perception threshold (VPT). Body Fat percentage was measured using Bioelectrical impedance analysis (BIA) device. Participants also went through thorough medical assessment that includes the oral glucose tolerance test (OGTT); For statistical analysis, appropriate approaches and tests were used such as descriptive statistics, t-test and chi square were used to find statistical significance difference. **Results:** Across all three strata the ABI) on the right side consistently showed statistically significant differences between the groups. When Body Fat Percentage was used, the right ABI was slightly lower among overweight/obese participants (1.02 ± 0.07) compared to non-overweight/obese (1.06 ± 0.07), p-value of 0.02. When waist circumference was used the right ABI was significantly reduced in the overweight/obese group (1.17 ± 0.4 vs. 1.29 ± 0.5; p=0.004). This pattern persisted even when BMI was used, where right ABI lower in overweight/obese individuals (1.02 ± 0.06 vs. 1.06 ± 0.08; p=0.008). Though all the ABI values were within the normal range 0.9-1.4. In contrast, left ABI, TBI right, and TBI left values showed no statistically significant differences across the groups. VPT values on both the right and left sides were similar between groups, with p-values ranging from 0.3 to 0.9. Comparable patterns were seen in the other groups, with minimal variation in mean VPT values which were within the normal range < 15V on VPT. Impaired fasting glucose (FBG ≥ 5.6mmol/l) was more common among overweight/obese women across all the strata BMI, WC and Body Fat Percentage. Using waist circumference, 16.7% in the overweight/obese group had impaired FBG vs. 1.5% in the non-overweight/obese (p=0.017). In the other two groups, impaired FBG ranged from 9.8%–10.5% in overweight/obese vs. 1.9%–2.0% in non-overweight/obese, though these differences were not statistically significant (p=0.17, p=0.2). Across all three groups, nearly all participants had normal 2-hour OGTT results. Impaired glucose tolerance (2hr OGTT value ≥ 7.8mmol/l) was observed only among non-overweight/obese women, proportion ranging from 1.5% to 2%, while none of the overweight/obese participants showed impairment. However, these differences were not statistically significant in any group (p=1 throughout). **Conclusion:** This study shows that using different criteria to define overweight/obesity BMI, (WC), and body fat percentage gives different insights into vascular, neuronal, and metabolic function. BMI showed more pronounced differences in demographic variables, WC was more sensitive to changes in fasting blood glucose, and body fat percentage identified more individuals as obese. Findings suggest that overweight and obesity in young black African women is associated with early changes in peripheral arterial function, detectable by the (ABI). Abdominal fat, as measured by waist circumference WC, appears most closely linked to metabolic changes, while peripheral neuronal function remains largely preserved in this group. **Recommendations:** Young black African women with overweight/obesity (increased BMI, WC and body fat percentage) should undergo regular screening to detect early vascular and nerve changes to help prevent complications like peripheral artery disease and neuropathy later in life. (WC) should be routinely measured, as it is a simple, low-cost tool that effectively reflects obesity-related risks to vascular health and glucose

metabolism. Future studies including overweight/obese individuals with advanced age and larger sample sizes are highly recommended.

435. Semakombe, M. (2025). Perceptions and facilitators of local herb use during labor and delivery among post-delivery women at Mkuranga district hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Local herbs use appears to be prevalent among pregnant women during labor. Reason as to why women in labor continue using the herbs despite the reported several adverse effects to the mother and her newborn baby remains quite unknown. Objectives: To explore perceptions and facilitators of local herb use during labor among post-delivery women at Mkuranga district hospital. **Materials and Methods**: A phenomenological explorative qualitative study was conducted to consented post-delivery women selected using maximum variation purposive sampling technique. Thirteen (13) in depth interviews were conducted using semi-structured Swahili interview guide with probing questions among users and non-users of local herbs use. All interviews were tape recorded using a digital audio recorder and transcribed in verbatim. NVivo 12 software was used to group the open created codes from which themes were named and identified. Deductive thematic analysis by Braun and Clarke was used. **Results**: We identified four (4) major themes. These were social-cultural drivers for local herbs use, easy accessibility and perceived safety of local herbs, perceived labor-related outcomes of local herbs use together with herbal practices and comparative perceptions with conventional medicine. **Conclusion:** Widespread use of local herbs during labor is influenced by sociocultural beliefs and perceived natural safety. Myths about spiritual vulnerability and fear of complications like caesarean delivery, reinforced by family and community pressure, further encourage their use. Culturally sensitive, community-wide education is essential. Enhanced regulation, research on herbal safety and efficacy, and safe knowledge-sharing among herbal practitioners are also recommended.

436. Semgomba, N.N. (2025). Assessment of Pathogenic Bacteria Contaminants and Antibiotic Susceptibility Pattern of Natural Fermented Milk in Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Fermented milk is rich in various nutrients, such as protein, carbohydrate, vitamins, and minerals and its intake has been shown to promote gut health since it holds probiotics. Bacterial contamination and unregulated use of antibiotics in dairy farms affects safety and

nutritional value of fermented milk. Improper handling, poor vending conditions, and poor hygiene practices among milk vendors can result in contamination of pathogenic bacteria like E. coli and S. aureus, leading to outbreaks of food-borne disease. The earlier study examined microbial load and antibiotic susceptibility patterns in raw and pasteurized milk. However, data on fermented milk among milk vendors is still limited in Tanzania. **Objective:** Assessing the level of contamination and antibiotic susceptibility pattern of the pathogenic bacteria of fermented milk in Dar es Salaam. **Methodology:** A cross-sectional study was done in Kariakoo, Dar es Salaam. Milk vendors were selected by convenience sampling. 83 fermented milk samples were randomly chosen and stored at 2–8°C. Samples were incubated at 37°C for 24 hours to grow colonies. Antibiotic testing used Muller Hinton Agar, and zone sizes were measured with a Vernier caliper. **Results:** Out of 83 fermented milk samples examined, 40 (48%) were positive for E. coli, while S. aureus was not detected. The factors associated with E. coli were poor hygiene practices, such as handwashing and utensils with cold water, and poor storage practices, such as storing milk, as well as poor knowledge of food safety. Antibiotic susceptibility testing showed 100% sensitivity to ciprofloxacin, ceftriaxone, and gentamycin but notable resistance to ampicillin, tetracycline, and trimethoprim-sulfamethazine. **Conclusion:** The study found that 48% of natural fermented milk samples sold by vendors were contaminated with E. coli, indicating possible fecal contamination due to poor hygiene and storage practices. S. aureus was not detected. While the E. coli strains were susceptible to ciprofloxacin, ceftriaxone, and gentamicin, they showed resistance to ampicillin, tetracycline, and trimethoprim-sulfamethoxazole. The results highlight the need for improved hygiene, vendor training, and responsible antibiotic use to ensure the safety of fermented milk.

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437. Sewando, S. (2025). "Implementation of respectful maternal care guidelines at Muhimbili National Hospital, Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Respectful Maternal Care (RMC) prioritizes women's autonomy, privacy, dignity, and freedom from violence during childbirth and is recognized globally as a vital component of high-quality maternal health services. Despite international and national efforts, including Tanzania's 2019 RMC guidelines, challenges such as abuse, neglect, poor infrastructure, and inadequate provider training persist, particularly in sub-Saharan Africa, where maternal mortality ratios remain high. Although RMC has been implemented at Muhimbili National Hospital in Tanzania, evaluating its effectiveness was essential to identify gaps and improve maternal health outcomes. **Objective:** This study aimed to evaluate the implementation of RMC at Muhimbili National Hospital in Dar es Salaam, Tanzania, focusing on the hospital's physical environment, medical staff training, and the efficacy of communication. **Methodology:** A cross-sectional study design employing a quantitative approach was conducted at MNH from April to May 2025. The study population included women who had given birth at MNH within the six months before the study, as well as healthcare providers working in the maternity wards. To select participants, a multistage sampling technique was employed for healthcare providers. Initially, stratified sampling was used to group providers, followed by simple random sampling to select a total of 92 participants. For the women who had recently used maternity services, simple random sampling

was used to select 169 participants. Data were collected using pretested, self-administered questionnaires and an observational checklist. The collected data were then analyzed using Stata version 15**. Results:** Effective communication was observed in 72.8% of healthcare providers, yet only 42.4% had received specific RMC training. Women reported physical environment barriers, including a lack of privacy, overcrowded wards, poor sanitary facilities, and the absence of labor companions. Overcrowding was significantly linked to less pleasant communication (AOR: 1.20; 95% CI: 1.04–1.54; p = 0.02). Additionally, 80.4% of providers identified inadequate vi privacy as a major challenge. Facility readiness showed many RMC components in place, but gaps remained in training documentation, hygiene, and support for birth companions. Conclusion and Recommendations: Muhimbili National Hospital has made notable progress in adopting Respectful Maternity Care, especially in fostering effective communication between healthcare providers and mothers. However, significant gaps remain in staff training, privacy, and infrastructure, which hinder the consistent provision of respectful care. Ongoing training and focused environmental improvements are crucial to enhance and maintain RMC practices

438. Shaban, S.J. (2025). Response To Endocrine Therapy and Predictive Factors Among Hormonal Receptor-Positive Breast Cancer Patients Treated with Curative Intent from January 2019 to December 2021 at Orci. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Globally, hormonal receptor-positive breast cancer represents about 60-70% of breast cancer cases, with 55% in Sub-Saharan Africa (SSA) and 26.4% in Tanzania. Blockage or modulation of Estrogen hormone signaling has become the mainstay of management. Despite the good initial response, many women progress or recur during or after endocrine therapy, and a significant number of women also die. Therefore, endocrine therapy resistance represents a significant challenge for optimal clinical management in this group. **Objective:** To determine the 3-year overall survival, endocrine therapy resistance, and their predictive factors for hormonal receptor-positive breast cancer patients treated with curative intent from January 2019 to December 2021 at Ocean Road Cancer Institute (ORCI). **Methodology:** This was a retrospective cohort study conducted at ORCI involving all patients diagnosed with Hormonal Receptor-Positive Breast cancer treated from January 2019 to December 2021. Sociodemographic and clinical variables were documented. Data were presented using summary statistics, and the 3-year overall survival and endocrine therapy resistance were shown by Kaplan-Meier curves. Predictive factors for overall survival and endocrine therapy resistance were evaluated by the log-rank test and Cox regression analysis. Statistical significance was determined by a P-value less than 0.05. **Results:** A total of 147 hormonal receptor-positive breast cancer patients were analysed. The 3-year overall survival (OS) rate was 81%, while endocrine therapy resistance (ETR) occurred in 38.1% of patients. Most participants were female (97.96%) with a median age of 52 years, and the majority (68%) presented at stage III. Infiltrating ductal carcinoma was the predominant histology (95.2%), and combined ER/PR positivity was found in 60.5% of patients. Endocrine therapy included tamoxifen or anastrozole, with a mean duration of 34.5 months. Distant metastases, particularly to bone, liver, and lung, were the most common patterns of relapse. Significant predictors of overall

survival were younger age (≤40 years), negative PR status, and non-ductal histology. Predictors of ETR included younger age, lower education level, stage III disease, and non-ductal histology. **Conclusion:** Despite a high rate of advanced-stage presentation, the 3-year overall survival was comparable to global data. However, the endocrine therapy resistance rate was higher than typically reported. Age, PR status, histology type, and stage were significantly associated with both survival and endocrine therapy outcomes. These findings emphasize the need for early detection programs, improved documentation of prognostic factors, and tailored patient education to enhance treatment adherence and outcomes.

439. Shabani, Z. (2025). Ethnobotanical, Antimycobacterial and Phytochemicals investigation of medicinal plants used in manage-ment of tuberculosis and its symptoms in Bahi district, Tanzania. Muhimbili University of Health and Allied Sciences

Abstract

Background: Tuberculosis (TB) continues to be a major cause of illness and death globally, especially in low-income countries, including Tanzania. The current treatment of TB is complicated by drug-resistant pathogens, TB and HIV co-infection, and toxicity, particularly the second and third-line anti-TB drugs. **The objectives:** This study aimed to investigate indigenous ethnobotanical knowledge, anti-mycobacterial activities, and phytochemicals of plant species used by communities in the Bahi District, Tanzania, for the management of TB and its Symptoms. **Materials and Methods:** The informants were obtained through purposive and snowball sampling in the Bahi district, Dodoma region, in Tanzania. A semi-structured questionnaire was used to collect indigenous knowledge of the community. The antimycobacterial test against non-pathogenic mycobacteria to determine the minimum inhibitory concentration (MIC) was performed using the microdilution method while the analysis of phytochemical classes was performed by chemical methods. The informant's data was analyzed quantitatively by ethnobotanical indices, and antimycobacterial activity was analyzed by comparing with cutoff points established by Kuete in 2023 as references. **Results:** *Entandrophragma bussei* aqueous extract demonstrates good activity with MIC of 39 µg/ml and ethanolic extract demonstrates average activity with MIC of 78.1 µg/ml against *My-cobacterium indicus pranii* followed by *Tamarindus indicus* and *Ozoroa insignis* with average activity compared to other species tested. **Conclusion:** The study showed that medicinal plants used in Bahi district contain important phytochemicals and exhibit antimycobacterial activity that validating their traditional role in TB management. **Recommendation:** This study recommends isolation and characterization of active compounds from *E. bussei*, *T. indica*, and *O. insignis* for pharmacological evaluation. Toxicological studies are needed to assess safety, while conservation and systematic documentation of medicinal plants to preserve traditional knowledge.

440. Shange, L. L. (2025). Patients' satisfaction with diabetic care services: a comparative analysis of insured and uninsured individuals at a tertiary healthcare facility. Muhimbili university of health and Allied Sciences.

Abstract

Background: Diabetes remains a major public health concern in Tanzania, with access and financial barriers significantly influencing the quality of care and patient outcomes. According to the World Health Organization (WHO) Quality of Care framework, patient satisfaction reflects the process and outcome dimensions of care, capturing patients' perceptions of accessibility, responsiveness, and service quality. Health insurance directly influences these dimensions by reducing financial barriers and improving continuity of care. Despite the rising diabetes burden, few studies in Tanzania have examined how insurance status affects satisfaction in tertiary facilities. Objective: To assess patient satisfaction with diabetes care services among insured and uninsured patients at Mloganzila Muhimbili National Hospital. **Methodology:** A facility-based cross-sectional study was conducted among 300 diabetic patients attending the outpatient diabetes clinic at Mloganzila Muhimbili National Hospital. Data were collected through exit interviews using the Diabetes Treatment Satisfaction Questionnaire (DTSQ). Data were analysed using Stata version 17, applying descriptive statistics, Chi-square tests, and multivariable modified Poisson regression to identify independent predictors of satisfaction. **Results:** The overall satisfaction rate was 67.3%. Insured patients reported higher satisfaction (median score = 4.5) compared to uninsured patients (median = 3.6; $p < 0.001$). In multivariable analysis, only insurance status remained a strong independent predictor (aPR = 3.28; 95% CI: 2.44, 4.40; $p < 0.001$). Additionally, 93.3% of patients who were "very satisfied" were insured, showing a strong link between coverage, satisfaction, and willingness to return. Conclusion: Insurance coverage emerged as the key determinant of patient satisfaction, influencing affordability, access, and continuity of diabetes care. Strengthening and expanding equitable insurance schemes can significantly enhance patient experiences and support the delivery of high-quality, patient-centred diabetes services in Tanzania.**Keywords:** Patient satisfaction, health insurance, diabetes care, WHO framework.

441. Shayo, G. (2025). Impact of urinary diversion on the survival of locally advanced cervical cancer patients treated at ocean road cancer institute and Muhimbili national hospital between. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cervical cancer (CC) is the leading female and gynecological cancer in the Low- and Medium-Income Countries (LMICs). Locally Advanced Cervical Cancer (LACC) is present in approximately 50% of patients with CC during diagnosis. LACC is associated with Obstructive Uropathy (OU), hydronephrosis, and deranged renal function, which can impact treatment outcome and survival. Urinary Diversion (UD) procedures, like Percutaneous Nephrostomy (PCN), are believed to improve treatment outcomes and survival rates in LACC patients with OU and/or hydronephrosis. Despite PCN establishment in Tanzania in 2018, its impact in improving treatment outcomes and overall survival (OS) in patients with LACC patients with OU and/or hydronephrosis is still unknown. **Objective:** The purpose of this study was to retrospectively determine the impact of UD on 2-year overall survival (OS) and predictors of 2-year OS among patients with LACC with OU and/or hydronephrosis in Tanzania, a resource-limited country. **Materials and methods:** This retrospective study was conducted at Ocean Road Cancer Institute (ORCI) and Muhimbili National Hospital (MNH). Data from 1215 patients with LACC stages IIB-IVA out of 2226 total CC patients treated from January 2020 to December 2021 were reviewed

from the medical charts. Of these, 167 patients had OU and/or hydronephrosis as indications for UD before and/or during definitive/palliative treatment. Of 119 patients who fulfilled the inclusion criteria with complete data, 37 underwent UD, and 82 did not have UD. Some of our independent variables included age, Human Immune deficiency Virus status, tumor size, OU and/or hydronephrosis site and grading, baseline serum creatinine levels, the use of UD, and treatment patterns. The primary endpoint was two years OS and the secondary endpoint was correction and improvement of elevated creatinine levels. The data obtained were entered through the Excel sheet data tool and then transferred to the SPSS version 26 for processing. Chi-squared test/Fisher's exact and student t-test were used to assess the relationship between categorical and continuous variables, respectively. Kaplan-Meier methods and curves, Log-rank, and Cox regression models were used in univariate and multivariate analysis, respectively, to determine the 2-year OS and its predictors. ANOVA statistical test was used to assess the trend of serum creatinine after urinary diversion. The significance level was set up to 0.05. **Results:** The age range was 41-61 years, with a mean age of 51.1 ± 9.9 years. Only 5% of the patients were insured, and of those who had UD, 61.1% were insured, compared to only 25.7% who were not insured (p=0.003). The prevalence of HIV was high at 31% but was not associated with OS. Only 13.4% and 1.7% had hypertension and DM as comorbidities. The prevalence of OU was 85.7% in the entire cohort and 66.7% among those who did not have UD compared to 35.3% of those who had UD (p=0.02). 56.3% of the entire cohort had unilateral hydronephrosis. The mean baseline serum creatinine level was 662µmol/L.Only 10.1% received UD and CCRT, and 36.1% CCRT alone without UD with a mean baseline creatinine level of 176µmol/L. 54.6% had UD and RT without chemotherapy, and 32.8% had RT alone with mean baseline creatinine level of 665µmol/L. The mean number of chemotherapy cycles was 3 with Cisplatin the most chemotherapy agent used (94.6%). The most EBRT technique was 2D (69.7%) with 65.5% able to receive Brachytherapy (p=0.045). UD was not statistically associated with OS but was associated with a longer median survival time of 25 months compared to 16 months in those who did not undergo UD (p=0.22). There was a 53% reduction of serum creatinine from the baseline 30 days post-UD (p=0.001). In the univariate analysis, UD was not associated with OS. However, in the multivariate analysis, UD was associated with a 40% decreased risk of mortality (aHR 0.6; p = 0.03). Patients with tumor size >5cm had 1.7 times more risk of death than patients with tumor size <5cm in diameter. Patients with baseline creatinine >260µmol/L had a 1.8 times risk of death than those <260µmol/L. Hydronephrosis site and grade had an adverse impact on OS with 1.9 times and 3.0 times risk of death in patients with bilateral compared to unilateral and mild compared to moderate and severe hydronephrosis, respectively (p= 0.008, 0.002).Patients who did not receive BT had 2 times more risk of death compared to those who had brachytherapy with EQD2 ≥72Gy having 40% less risk of dying than those who had EQD2 of <72Gy (p=0.005, 0.003). Chemotherapy cycles >3 had negative impact on those who did not undergo UD with 2 times more risk of death compared to those who had UD (p=0.006). **Conclusions:** UD demonstrated significant decrease mortality risk by 40% among LACC patients with longer median survival time of 25 months compared to 16 months in patients who did not undergo UD. Furthermore, UD significantly improved post-UD serum creatinine levels by 53%.

442. Sibora, G.D. (2025). effectiveness of pre-hemodialysis psychological counselling among patients with end-stage kidney disease at Muhimbili National Hospital, Dar es Salaam, Tanzania. Muhimbili University of Health and allied since.

Abstract

Background: End-stage kidney disease represents the final stage of chronic kidney disease, requiring life-sustaining therapies such as hemodialysis or a kidney transplant. Globally and in Tanzania, patients with End Stage Kidney Disease often experience significant psychological distress manifested as anxiety, depression, and fear, which can impair treatment adherence, reduce quality of life, and increase mortality. Despite this burden, psychological support is rarely integrated into routine pre-hemodialysis care. Pre-hemodialysis psychological counselling may improve patients' emotional well-being, coping abilities, and readiness to start hemodialysis, but evidence on its effectiveness in the Tanzanian context is limited. **Objectives:** This study aimed to assess the effectiveness of pre-hemodialysis psychological counselling among patients with End Stage Kidney Disease in reducing psychological distress, improving coping strategies, and psychological readiness to initiate hemodialysis. **Materials and Methods:** A quasi-experiment study design with a non-equivalent control group was conducted among 34 adult End Stage Kidney Disease patients at Muhimbili National Hospital, equally divided into intervention and non-intervention groups. The intervention group received one-on-one counselling sessions lasting 30-45 minutes, while the non-interventional group received routine care without added intervention. Data were collected using Kessler's Psychological Distress Scale and Brie Resilient Coping Scale at baseline and two weeks post-intervention. Data analysis was performed using Statistical Package of the Social Sciences version 27 with descriptive statistics, paired and independent t-tests, and linear regression. **Results:** At baseline, 88.2% of patients in both groups exhibited severe psychological distress and low coping resilience. Post-intervention, the intervention group showed statistically significant reduction in psychological distress ($t= 13.4$, $p< 0.001$, $d= 0.84$), significant improvements in coping strategies ($t= -9.17$, $p< 0.001$, $d= 0.52$), and increased readiness to start dialysis ($t= 11$, $p< 0.001$, $d= 0.83$). The non-intervention group showed no meaningful improvements. Levine's test showed homogeneity between groups, and multiple linear regression analysis found no significant influence of sociodemographic or clinical variables on psychological outcomes. **Conclusion:** Pre-hemodialysis psychological counselling significantly reduces psychological distress, enhances coping skills, and improves psychological readiness for initiating hemodialysis among patients with End Stage Kidney Disease. These findings underscore the value of integrating mental health support into nephrology care pathways. **Recommendations:** The researcher recommends that structured psychological counselling be institutionalized as part of standard pre-hemodialysis care in Tanzania. Rental units should collaborate with trained mental health professionals to provide these services. National health policy should incorporate psychological care into chronic kidney disease management to enhance patients' outcomes and quality of life.

443. Sindayihebura, Z. (2025). Prevalence and factors associated with relapse in individuals with psychotic disorders attending psychiatric outpatient clinic at Muhimbili National Hospital, Tanzania. Muhimbili University of Health and Allied Science.

Abstract

Background: Relapse is the most challenging characteristic of Psychotic Disorders for mental healthcare providers. It potentiates a decline in functioning and hinders recovery. Many factors, such as the early onset of psychosis, lack of social support, substance use, and poor adherence to medications, have been identified as enhancing relapse. Addressing these factors can diminish the prevalence of relapse and mitigate its impact. Therefore, there is a need to identify factors associated with relapse and prevent it in our settings. **Broad Objective:** To determine the prevalence and biopsychosocial factors associated with relapse among individuals with Psychotic Disorders attending the Psychiatric Outpatient Clinic at Muhimbili National Hospital (MNH), Dar Es Salaam, Tanzania. **Materials and Methods:** This is a hospital-based cross-sectional analytical study. A consecutive sampling technique was used to enrol 314 individuals with diagnoses of Psychotic Disorders at the Psychiatric Outpatient Clinic of MNH. The data was collected from October to November 2024 using a semi-structured questionnaire. The Life Events Survey Modified Version (LES-MV) was used to identify the participants' stressful life events. The OSLO Social Support Scale-3 (OSSS-3) assessed the perceived social support. Relapse was captured on a readmission basis. Data analysis was conducted using STATA version 18, including bivariate and multivariable regression analyses. A P-value<5% was statistically significant. **Results:** A total of 282 participants' questionnaires were analysed. Their ages (in years) ranged from 18 to 86 (Mean: 39.4 ± 13.8). One hundred thirty-eight (48.9%) had psychosis onset before 25 years. One hundred thirty-four (47.5%) had a history of substance use. Only forty-six (16.3%) had strong social support. The lifetime prevalence of relapse was 74.7%. Relapse was associated with late onset of psychosis (AOR=0.28; 95%CI: 0.06-0.98; P<0.05). **Conclusion:** The findings of this study revealed that relapse is prevalent among persons with Psychotic Disorders. The late onset of psychosis and strong social support were protective factors associated with relapse, while substance use was risk factor for relapse. **Recommendations:** these findings call for strengthening psychoeducation to families with members diagnosed with Psychotic Disorders, focusing on family support, and substance use prevention. Moreover, substance use and social support need particular attention in the management of individuals with Psychotic Disorders at the Psychiatric Outpatient Clinic.

Keywords: *Relapse, Psychotic Disorders, Muhimbili National Hospital (MNH).*

444. Smart, G. S. (2025). Cost effectiveness of hydroxyurea in the treatment of sickle cell disease compared to standard care at Muhimbili national hospital in Dar es salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background and Objective: Tanzania is home to an estimated 11,000 newly detected cases of Sickle Cell Disease (SCD) annually, a fatal hereditary condition that primarily affects red blood cells. It is more prevalent in sub-Saharan Africa, where 70% of cases are confined. Despite the established clinical efficacy of hydroxyurea in lowering morbidity and mortality, its cost-effectiveness is not known. **Objective:** This study aimed to determine the cost-effectiveness of hydroxyurea in the treatment of SCD compared to standard care from the perspective of the health care provider at Muhimbili National Hospital. **Materials and Methods**: An economic evaluation designed as a retrospective cross-sectional study was conducted using activity-based micro costing to estimate total costs associated with hydroxyurea and standard care for providing outpatient SCD care at Muhimbili National Hospital, Dar es Salaam, Tanzania, during the financial year 2023/24. The effectiveness was measured using the annual crisis prevented. The incremental cost-effectiveness was evaluated using a decision tree developed in Tree Age Pro version 2025 and reported as the ratio of incremental cost (USD) of hydroxyurea and standard care strategies. A Tanzanian GDP-based cost-effectiveness threshold was used to decide the cost-effective strategy. A strategy with an incremental cost-effectiveness ratio below the GDP per capita of USD 3672.0 was considered cost-effective. Sensitivity analyses were conducted to determine parameters influencing model findings and the impact of uncertainty. **Results:** The annual unit cost of treating SCD with Hydroxyurea at MNH was USD 28.3 (95% CI: 3.2, 53.3), compared to USD 19 (95% CI: 2.3, 35.8) for standard care. In terms of effectiveness, hydroxyurea prevented crises in 99% of SCD clients while standard care prevented crises in 63% of SCD clients per year. The incremental cost effectiveness ratio (ICER) of hydroxyurea compared to standard care was USD 81.87 per crisis prevented. This was lower than the cost-effective threshold for Tanzania, therefore favoring hydroxyurea as a more cost-effective strategy in the prevention of SCD crises. **Conclusion:** Given the high burden of SCD and limited resources within the Tanzanian health system, the use of Hydroxyurea as a routine treatment could improve patient outcomes while ensuring more efficient use of health sector funds.

445. Somaiya, A.P. (2025). The performance of perfusion index, shock index, and news score in predicting adverse outcomes among critically ill adult patients presenting at the emergency department at Muhimbili National Hospital. Muhimbili university of health and Allied Sciences.

Abstract

Background: Patients with critical conditions demand prompt care to prevent impending adverse events. Shock index (SI) and the National Early Warning Score (NEWS score) have been widely used in the emergency department (ED) to predict adverse outcomes, though both have limitations. The perfusion index (PI) is readily available on cardiac monitors, but its performance in predicting adverse events is not well-studied in the ED. **Methods:** This prospective cohort study was

conducted at Muhimbili National Hospital between March and April 2025. Patients who were triaged as "emergency" were consecutively recruited. The primary outcome was the occurrence of adverse events at ED, defined as cardiac arrest at the ED, airway compromise with the need for intubation at the ED, initiation of vaso- active drugs at the ED. The secondary outcome was 24-hour (in-hospital) mortality. The area under the receiver operating characteristic curves (AUROC) for the SI, NEWS score and PI in predicting adverse events was compared using DeLong's test. Cut-offs for the SI (≥1) and NEWS score (≥5) were based on established thresholds in the literature at baseline and at 2 hours. Youden's index was used to determine the optimum threshold value for the PI which was <1.54 at baseline and <1.21 at 2 hours. **Results:** A total of 347 patients were included and 91 had adverse events. Abnormal values in each index test were significantly associated with adverse outcomes. With an AUC of 0.729 (0.670 – 0.788) the initial PI demonstrated good discriminatory ability in predicting adverse outcomes among critically ill patients at baseline, outperforming both SI (p = 0.031) and NEWS score (p = 0.002). At 2 hours, the NEWS score showed improved performance with an AUC of 0.666 (95% CI 0.605 – 0.726), while SI demonstrated a modest change. In contrast, the performance of PI declined with an AUC of 0.687 (95% CI 0.622 – 0.751). There was no statistically significant difference in performance among the three index tests at 2 hours. **Conclusion:** PI demonstrated the highest discriminatory ability at baseline in predicting adverse outcomes in critically ill patients. The NEWS score performance improved with serial measurements. The high specificity of SI supports its use as a confirmatory tool.

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446. Stephano, B. (2025). Proportion and factors associated with loss to follow up among patients with clubfoot treated with the ponseti technique at Muhimbili Orthopedic Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Clubfoot is a congenital deformity of the foot that requires long-term treatment to correct the anomaly. The Ponseti method is a gold standard treatment of clubfoot which involves a series of casting, surgery, and bracing that lasts several years to achieve a functional and pain-free foot. Successful clubfoot treatment requires adherence to the treatment plan, regular follow-up visits, and active participation by the patient and their caregivers. However, Loss to follow-up in clubfoot patients is a common problem that can lead to relapse, disability, and a poor quality of life. This study aims to identify the potential factors associated with loss to follow up among patients with clubfoot treated with the Ponseti technique and develop targeted interventions to improve treatment adherence and long-term outcomes of patients with clubfoot. **Objective:** To determine the proportion and factors associated with loss to follow-up among patients with clubfoot treated with the Ponseti technique at Muhimbili Orthopedic Institute between June 2023 to December 2023 Study Design: Retrospective Cross-sectional study. Material and Method: A cross-sectional study was conducted at MOI, involving 186 patients with clubfoot who have been registered at the MOI clubfoot database from January 2020 to December 2023 and treated with Ponseti technique. Data were collected using a structured questionnaire and medical records review from the Clubfoot database. A guided questionnaire was used to interview the patient's guardian/parents. The information gathered from the questionnaire was coded and entered into the statistical software

SPSS version 23 for analysis. **Results:** In this study, there were 186 participants, 122 (65.6%) completed follow-up visits and 64(34.4%) were lost to follow-up. Over half of the participants were aged less than 2 years 55.9 %, with the highest proportion being males 121 (65.1%). The results showed that long hours to reach the hospital, dissatisfaction with care, patients feeling good and healed, vi forgetting the appointment date, family relocation, and being sick on the appointment day were independently associated with loss to follow-up. **Conclusion:** LTFU among patients with clubfoot treated with the Ponseti technique at MOI is a problem and this was significantly associated with long hours to reach the hospital, dissatisfaction with care, patients feeling good and healed, forgetting the appointment date, family relocation, and being sick on the appointment day of follow-up. **Recommendation:** Addressing these factors through targeted interventions, including the development of reminder systems, regular updating of the database, improved accessibility to healthcare services, and patient-centered care approaches can potentially mitigate LTFU and improve treatment adherence and long-term outcomes of patients with clubfoot.

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447. Stephen, N. (2025). Clinical audit on management of suspected pulmonary embolism in pregnancy and postpartum at Muhimbili National Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Maternal death related to pulmonary embolism (PE) is significantly higher in developing countries than in developed countries. Proportion/prevalence of Pulmonary embolism is low but case fatality rate is high. Therefore, it is important to evaluate standards of care applied during pulmonary embolism diagnosis and management as a way of reducing maternal mortality and improve quality of care. **Aim of the Study:** To evaluate the proportion and factors associated with managing outcome of Pulmonary Embolisms among pregnant women admitted at Muhimbili National Hospital (MNH). **Methods:** A cross-sectional study design was conducted to review 86 patient files with pulmonary embolisms during pregnancy and postpartum period selected conveniently at MNH. Audit of national guideline standards for the management of pulmonary embolism and SPSS software version 23 was used for data analysis. Frequency tables and proportions are used to summarize the descriptive statistics. Pearson chi-square was used for associations between the dependent and independent variables and p-value ≤ 0.05 was used for statistically significant variables. **Result:** among the 86 participants, 67.4% were aged 18-35, and 68.8% were confirmed to have PE among the suspected case. Adherence to standard criteria for the management of PE was found to be 86.0%, contributed by confirmation of using CTPA and the administration of Fractionated LMWH. Maternal outcomes showed 31.4% died, which was associated with maternal age, heart failure, operative delivery, and prolonged immobilization significantly influenced PE confirmation, highlighting the importance of targeted interventions and early detection strategies. **Conclusion and recommendation.** The high confirmation rate of PE underscores accurate diagnosis. Fractionated LMWH and CTPA are standard practices, and maternal outcomes indicate significant survival rates. Age, admission mode, and specific medical conditions notably impact PE confirmation Recommendations include implementing Risk

Assessment Tools in routine antenatal care, ensuring timely access to imaging modalities like CTPA, and improving multidisciplinary collaboration among specialists for comprehensive PE management in pregnant women.

448. Sugra, S.F. (2025). Lung Cancer And Its Associated Factors at Muhimbili National Hospital, An Ambispective Study, January 2024 – December 2024. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Lung cancer remains a significant health challenge globally, being the foremost cause of cancer-related morbidity and mortality. Smoking, predominantly in the Western world, accounts for over 80% of lung cancer cases, presenting a preventable public health crisis. In Tanzania, lung cancer comprises 4.6% of cancer-related deaths, yet data on its prevalence and risk factors remained scant, highlighting a critical knowledge gap. **Aim This study:** aimed to illuminate the prevalence of lung cancer ans its associated factors among patients undergoing lung biopsy at Muhimbili National Hospital. **Methods:** A cross-sectional study was conducted between January and December 2024, using both retrospective and prospective data. We included 170 patients who underwent either bronchoscopy with endobronchial biopsy or CT-guided core needle biopsy. Sociodemographic and clinical information were obtained, and histological diagnosis was confirmed by a panel of pathologists. Data analysis was done using STATA version 16.1. Modified Poisson regression analysis with robust error variance used to assess the associations between various risk factors and lung cancer. Results Out of 170 patients who underwent lung biopsy, the prevalence of lung malignancy was 51.8%. Adenocarcinoma was the most common histological subtype. No sociodemographic or clinical factors were found to be significant predictors of malignancy. **Conclusion and recommendation:** Lung cancer is prevalent among patients undergoing lung biopsy at MNH, with adenocarcinoma being the most common type. The absence of significant predictors highlights the need for broader studies to better understand risk factors in the local setting.

449. Suke, A.N. (2025). Evaluation on implementation fidelity of the diabetic education intervention among diabetic patients at Muhimbili National Hospital. Muhimbili university of health and Allied Science.

Abstract

Background: Diabetes is a major risk factor for various complications, including cardiovascular disease, kidney disease, blindness, and lower-limb amputations. Moreover, diabetes is often accompanied by other health conditions such as hypertension, dyslipidemia, and obesity. According to the World Health Organization (2019), approximately 463 million adults lived with diabetes in 2019, and this number is expected to rise to 578 million by 2030 Despite the availability of interventions, many diabetic patients do not achieve optimal glycemic control, which increases their risk of developing complications. Non-adherence to medication regimens, inadequate lifestyle modifications, and poor patient education are common barriers to effective diabetic education interventions at hand that are implemented by the healthcare workers. **Objective of the**

study: To evaluate the implementation of diabetes mellitus education intervention among diabetic patient, focusing on their adherence of the intervention of the diabetic education intervention among diabetic patients. Material and Methods: An analytical cross sectional study design was applied, employing quantitative approach into which the data was collected from the patients attending diabetic clinic at Muhimbili National Hospital. The data was collected in 3 weeks using questionnaires and data abstraction checklist. Descriptive statistics was performed for frequencies and percentages. To control the confounders multivariable logistic regression was performed. **Results :** 405 diabetic patients were involved (56.4% female, median age 53), with 84.2% having type 2 diabetes and over 50% living with diabetes. The largest age group was 60+, and 94% felt confident managing diabetes. While 76.6% reported receiving enough education, only 57.6% always followed medical advice. Knowledge levels were significantly lower among gestational diabetes patients ($p = 0.047$) and male participants, but higher among those aged 45–59 and 60+ ($p = 0.041$), and those with type 1 diabetes. Education was mainly delivered via group sessions (96%) and one-on-one counseling (92%), though digital tools were rarely used. **Conclusion:** Diabetes knowledge is generally adequate; however, gaps still exist among males and gestational diabetes patients. Education efforts were strong, but adherence and resource limitations remain concerns. Tailored interventions and greater use of digital tools are recommended. Strengthening staff and educational resources are the key points in improving long-term diabetes educational program success.

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450. Suma, D.M. (2025). Determinants of the Cholera Outbreak in Songwe District Council, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Cholera remains a major public health challenge in Tanzania, particularly in Songwe District Council, where outbreaks persist due to inadequate water, sanitation, and hygiene (WASH) practices. This study aimed to identify key socio-demographic, environmental, and health surveillance determinants contributing to cholera prevalence in the region. **Methodology:** An analytical cross-sectional study was conducted among 345 adults in Songwe District Council using a structured questionnaire adapted from the WHO cholera survey tool. Stratified and systematic random sampling were applied across 18 wards. Data were analysed using SPSS version 28.0, with descriptive statistics and multivariable logistic regression used to assess associations. Statistical significance was assessed at 95% CI and $p \leq 0.05$. **Results:** Cholera prevalence was 27.2%. Individuals aged 31–45 years (aOR = 2.26) and over 45 years (aOR = 2.40) had higher odds of infection compared to those under 30. Larger households (≥5 members) were at increased risk (aOR = 3.49), and households with under-five children had elevated odds (aOR = 2.6). Poor hygiene practices—especially lack of handwashing after toilet use (aOR = 21.41) and before eating (aOR = 8.31)—were strongly associated with increased cholera prevalence. Absence of soap (aOR = 2.21) also contributed to risk. Formal reporting to health authorities was protective (aOR = 0.29), while reactive engagement through community health workers (aOR = 5.75) and health worker visits (aOR = 3.74) were associated with existing cases. **Conclusion:** Age, household size, hygiene gaps, and delayed health responses were key drivers of cholera transmission. Promoting consistent

handwashing and strengthening formal surveillance systems are critical for reducing cholera burden in Songwe District Council.

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451. Swai, D. A. (2025). Evaluating The Implementation of Tanzania's Fifth National Multi–Sectoral Strategic Framework on Hiv and Aids; The Case of Hiv Prevention Among Adolescents and Young Adults in Higher Learning Institutions in Dar Es Salaam. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV remains a significant public health challenge in Tanzania, particularly among adolescents and young adults in higher learning institutions in urban centres like Dar es Salaam. Despite the implementation of Tanzania's 5th National Multi-sectoral Strategic Framework on HIV and AIDS, gaps persist in effectively reaching and reducing HIV transmission within this vulnerable population (5). Understanding the implementation dynamics and identifying the factors influencing the framework's success are crucial for optimizing HIV prevention efforts. **Aim:** This study intended to assess the implementation of Tanzania's Fifth National Multi-Sectoral Strategic Framework on HIV and AIDS in preventing HIV targeting adolescents and young adults in higher learning institutions in Dar es Salaam. **Materials and Methods:** The study design employed was exploratory qualitative study to ensure a thorough evaluation. Data collection included eleven key informant interviews with key multi-sectoral stakeholders such as the Ministry of Health (MoH), TACAIDS, PORALG, the Ministry of Education (MoE) and the Ministry of Information, Culture, Arts and Sports, the deans of students and the ministers of health from student administrations of Dar es Salaam University College of Education (DUCE), the University of Dar es salaam (UDSM) and the Institute of Finance Management (IFM). Additionally, ten focus group discussions were conducted, five with male students and five with female students, comprising adolescents and young adults aged 17–24 years enrolled in the aforementioned higher learning institutions in Dar es Salaam. Each group included 8 to 13 participants pursuing diploma or degree programs. The collected data were analysed using thematic analysis. **Results:** Findings from this study revealed that several HIV prevention interventions are in place, including condom distribution, health education, HIV testing services, mobile outreach and peer education clubs. However, these services were moderately utilized due to factors such as low student awareness and limited initiative. While government stakeholders demonstrated familiarity with national strategic frameworks, institutional actors exhibited limited awareness and poor integration of these policies into their institutional plans. Financial constraints, donor withdrawal and weak coordination further hindered implementation fidelity. **Conclusion:** Although essential HIV prevention interventions including condom distribution, HIV testing and counselling, PrEP and peer education are present in Dar es Salaam's Higher Learning Institutions, their effectiveness is undermined by systemic implementation failures. These failures are primarily characterized by low student awareness of services like PrEP, inadequate integration of the national strategy (NMSF V) into institutional policies and critical resource constraints. The study recommends mandating multi-sectoral policy integration, institutionalizing youth-centred service accessibility and establishing TACAIDS-led accountability for resource and results through dedicated M&E tools to

ensure the long-term sustainability of the HIV response among adolescents and young adults in academic settings.

452. Sylivester, H. (2025). incidence and risk factors of HIV among exposed infants delivered by retested HIV-positive mothers in lake zone, Tanzania 2022-2023. Muhimbili University of Health and Allied Sciences.

Abstract

Background: HIV/AIDS remains a global health issue, particularly in low- and middle-income countries. Prevention of Mother-to-Child Transmission (PMTCT) programs have made significant progress in reducing HIV transmission from mother to child during pregnancy, childbirth, or breastfeeding. However, new HIV infections among infants resulting from the mother-to-child transmission of HIV in low- and middle-income countries continue to exist. **Objective**: To determine the incidence and risk factors of HIV among exposed infants delivered by retested HIV-positive mothers in the Lake Zone from 2022 to 2023**Methods:** A cohort study was conducted using retrospective data collected in 186 health facilities from Mwanza, Mara, Kagera, and Shinyanga. Data from the electronic CTC 2 database was extracted and recorded in an Excel sheet. The study included a sample of 362 retested HIV-positive mothers with living infants tested for HIV by DNA-PCR from birth to 1 year. The incidence of HIV at 1 year is calculated as the number of HIV-exposed infected divided by the total number of HIV-exposed infants. Multivariable logistic regression was used to assess independent factors associated with HIV among exposed infants delivered by retested HIV-positive mothers. The strength of the association was assessed using the adjusted odds ratio (aOR) along with its corresponding 95% confidence intervals (CI). **Results:** The overall incidence of HIV among exposed infants delivered by retested HIV-positive mothers in the Lake Zone was 7.2% (95% CI = 4.7%, 10.3%). The study found that mixed feeding (aOR = 4.08, 95% CI = 3.22, 9.52), poor ART adherence (aOR = 4.13, 95% CI = 2.04, 7.41), CD4 counts less than 500 (aOR = 3.62, 95% CI = 2.50, 7.23), mothers at WHO clinical stage 3 or 4 (aOR = 1.99, 95% CI = 2.13, 6.83), mothers with a detectable viral load (aOR = 5.33, 95% CI = 3.56, 9.17), and mothers identified in the third test or above or during breastfeeding (aOR = 2.87, 95% CI = 1.13, 7.38) were significantly associated with the incidence of HIV among exposed infants delivered by retested HIV-positive mothers. **Conclusion:** The incidence of HIV among exposed infants delivered by retested HIV-positive mothers in the Lake Zone exceeds the WHO recommendation. The HIV incidence is associated with maternal HIV clinical characteristics such as, viral load, baseline CD4 counts, HIV clinical stage, ART adherence, breastfeeding practice in the first six months, and period of HIV diagnosis. These results underscore the need to ensure late-identified HIV-positive mothers adhere to PMTCT services, rapid same-day antiretroviral therapy initiation, frequent viral load monitoring to assess response to antiretroviral therapy and adjust treatment as needed, and provision of breastfeeding counseling and addressing inadequate HIV testing through the introduction of HIV self-tests.

453. Tarai, T.S. (2025). Evaluation of the Proportion of Blood Transfusion and Predictors in Pediatric Patients During Cardiopulmonary Bypass Surgery at JKCI. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Pediatric cardiac surgery often involves significant bleeding, necessitating blood transfusion for most patients. A small subset of patients, around 10-20%, accounts for 80% of the total blood transfused in these surgeries. Both patient-related and procedure-related factors influence the need for blood transfusion. Therefore, strategies to minimize blood transfusions could greatly benefit pediatric cardiac surgical patients. **Objective:** Evaluation of the proportion of blood transfusions and predictors in pediatric patients during cardiopulmonary bypass surgery at JKCI. **Methodology**: A cross-sectional study design was employed. A total of 61 pediatric patients who underwent cardiopulmonary bypass surgery at JKCI were consecutively sampled. Patient records and a standard observation checklist were used to assess predictors of blood transfusion in pediatric patients. The data was analyzed using SPSS 23. Consistency checks were performed on the data to identify missing information or outliers. Descriptive statistics were summarized using frequency and percent. The association between independent and dependent variables was assessed using the chi-square test, univariate and multivariate logistic regression. A 95% confidence interval was computed, and a P-value of <0.05 was considered statistically significant. **Results:** 61 pediatric cardiac patients were enrolled, the mean age was 3.90±3.25, the mean weight was 11.16±10.23,37(60.66%) were female, notably 72.13% of patients were transfused during CPB. Cyanotic HD (AOR=1.382; CI: 1.203-9.420; P=0.0322), nadir hematocrit (AOR=13.536; CI: 1.265-44.811; P=0.0312), priming composition (AOR=10.749; CI: 1.655-69.829; P=0.0129), and priming volume (AOR=7.33; CI: 1.496-35.939; P=0.0140) were significant independent predictors for blood transfusion during CPB. **Conclusion and Recommendation:** Identifying and responding to predictors of blood transfusion in pediatric cardiac surgery is crucial. Transfusion decisions must stem from careful clinical assessment, balancing risks and benefits. Furthermore, adopting Blood conservation techniques in these surgeries has proven effective in reducing transfusion needs.

454. Tawale, M. (2025). Prevalence and factors associated with low cardiac output syndrome among post cardiac surgery patients at Jakaya Kikwete Cardiac Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Low cardiac output syndrome (LCOS) after heart surgery, is a dangerous side effect that is linked to higher rates of morbidity, death, and prolonged hospital admissions. Early diagnosis and treatment are crucial for improving patient outcomes. However, identifying the specific factors contributing to LCOS in individual patients remains a challenge. **Aim:** This study investigated the prevalence and risk factors associated with low cardiac output syndrome following cardiac surgery at JKCI. **Methodology:** The study was a cross-sectional one involving 169 patients who underwent cardiac surgery and data analysis was done through SPSS version 27 making use of descriptive statistics, chi-square tests and multivariate logistic regression with odds

ratios to identify significant independent factors, using $p<0.05$ as the threshold for statistical significance.**Results:** Low Cardiac Output Syndrome (LCOS) was a significant post-surgical complication, occurring in 42% of the study population. Key indicators of LCOS included low blood pressure (85.9%) and decreased urine output (67.6%). Pre-existing conditions such as heart failure (69.7%), myocardial infarction (60.4%), and congenital heart disorders (60.0%) were strongly associated with LCOS. Post-surgical complications significantly linked to LCOS included respiratory failure (80.0%), stroke (77.8%), and renal failure (65.1%). Factors increasing the risk of LCOS were ASA classification, pre-medical problems, intraoperative complications, and longer ICU stays, with intraoperative complications being the strongest predictor (OR = 46.76). This highlights the critical need for vigilant monitoring and proactive management of at-risk patients to improve post-operative outcomes. **Conclusion and recommendations:** Low Cardiac Output Syndrome (LCOS) affected 42% of patient's post- heart surgery, with low blood pressure and decreased urine output as co n indicators. Pre-existing conditions like heart failure and intraoperative complications si cantly increased the LCOS risk. I recommend prioritizing pre-operative screening for at-risk patients and enhancing post-surgical monitoring for early LCOS detection. Implement strategies to minimize intraoperative complications, as they strongly predict LCOS.

455. Temu, G. M. (2025), Determinants of Cd4 Cell Count Recovery Among Adults Living with HIV on Second-Line Antiretroviral Therapy in Tanzania, Muhimbili university of health and Allied Sciences

Abstract

Background: Second-line antiretroviral therapy (ART) is essential for people living with HIV (PLHIV) experiencing first-line treatment failure, yet their CD4 recovery remains poorly understood. While viral load monitoring is central to assessing treatment success, CD4 cell count remains a critical immunologic marker, especially in resource-limited settings. Understanding the determinants of CD4 recovery is essential for optimizing second-line ART outcomes and supporting the UNAIDS third 95 target on viral suppression. **Objective:** To assess the proportion of CD4 recovery and identify its associated factors among adults living with HIV on second-line ART in Tanzania. **Methodology:** This was a cross-sectional study involving secondary analysis of routine HIV care data from the national CTC3 macro database. Records of adults (≥18 years) switched to second-line ART between January 2018 and December 2022 were included. CD4 recovery was defined as a ≥50% increase in CD4 count within one year of switching. Participants with at least two CD4 measurements were eligible. Key variables included viral load (VL), TB history, ART duration, facility level, age, sex, and regions. Descriptive statistics summarized participant characteristics. Univariable logistic regression identified crude associations, and multivariable logistic regression estimated adjusted odds ratios (aORs) with 95% confidence intervals. Statistical significance was set at $p < 0.05$. **Results:** Among 14,042 adults on second-line ART (60.4% female, median age 44 years), the median CD4 at switch was 457 cells/mm³ (IQR: 267–670), with 10.7% <200 cells/mm³. Overall, 33.6% achieved CD4 recovery (≥50% increase at 12 months); median CD4 percentage change 17% (IQR: –5%–72%). Multivariable analysis reduced odds of CD4 recovery with increasing age aOR for ≥55 years; 0.61 (0.52–0.71),

widowhood aOR: 0.86 (0.75–0.99), receiving care at dispensary aOR: 0.56 (0.45–0.71), public aOR: 0.75 (0.62–0.91) or private aOR: 0.77 (0.64–0.94) facility, and the aOR for residence in Southern zone 0.78 (0.69–0.88), western zone 0.72 (0.63–0.83), Southern Highland 0.76 (0.63–0.91). Advanced WHO stage at switch was associated with increased odds of CD4 recovery, with an aOR for those categorized as Stage 4; 1.39 (1.29–1.50). Participants with CD4 recovery had significantly higher odds of achieving viral suppression at one year. Sex, ART duration, VL at switch, adherence, and TB history were not associated with CD4 recovery. **Conclusion:** One-third of adults on second-line ART achieved CD4 recovery, which was influenced by age, facility type, geographic zone, and clinical stage at switch. These findings highlight the importance of strengthening treatment capacity across all facility types, ensuring that standardized ART services and laboratory capabilities are equitably distributed, and targeted medical and psycho-social support for the aging population of people with HIV in local settings.

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456. Tesha, A. (2025). Magnitude and factors associated with in-hospital mortality among adults admitted at Morogoro Regional Referral Hospital. Muhimbili University of Health and Allied Sciences.

Abstract

Background: In-hospital mortality is a key indicator for evaluating healthcare quality, with global rates ranging from 1% to 40%. Various demographic, clinical, and hospital-related factors are the determinants of patient mortality. Study conducted in Tanzania indicates higher mortality rates in zonal, specialized, and referral hospitals, with the Morogoro regional referral hospital showing the highest rates over the past decade. Identifying the factors that influence mortality is essential for understanding disease burden and guiding evidence-based policy development, service planning, and resource allocation**. Objective:** This study aimed to determine the magnitude and identify factors associated with mortality among adults admitted at Morogoro Regional Referral Hospital (MRRH) from July 2024 to March 2025.**Material and methods:** A hospital-based cross-sectional study was conducted at MRRH using data extracted from the electronic hospital management system. The study population included all patients aged 15 years and above admitted from July 2024 to March 2025. STATA version 18 was used for analysis. Categorical variables were summarized with frequencies and percentages, while continuous variables were reported as medians with interquartile ranges. Hospital mortality rates were calculated, and associated factors were identified through univariable and multivariable logistic regression analyses. Statistical significance was set at 95% confidence intervals with p-values <0.05. **Results:** Among 6,005 hospitalized patients, 525 in-hospital deaths were recorded, yielding an overall in-hospital mortality rate of 8.7% (95% confidence interval (CI): 8.04-9.48). Disease specific mortality was the highest in patients with Circulatory disease, followed by Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome HIV/AIDS (14.3%) and other infectious diseases (12.4%). Multivariable analysis identified significant predictors of increased mortality risk including, advancing age (Adjusted Odds Ratio (AOR) 1.02, 95%CI 1.02-1.03), male sex (AOR

1.40, 95%CI 1.15-1.70), uninsured (AOR 2.37, 95%CI 1.84-3.06), and prolonged hospitalization (AOR 1.03, 95%CI 1.02-1.04). Compared to infectious diseases, lower mortality risk was observed in patients with disease of the blood and blood forming organs (AOR 0.44, 95% CI 0.23 - 0.82, p = 0.01),

457. Theophil, M. (2025). Chronic kidney disease screening and associated factors among people living with HIV on anti retroviral therapy in Dar Es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Chronic Kidney Disease (CKD) is a growing global health challenge, disproportionately affecting people living with HIV (PLHIV) on antiretroviral therapy (ART). Despite recommendations for routine CKD screening, adherence remains inconsistent in resource-limited settings like Tanzania, leading to delayed diagnosis and adverse outcomes. Understanding the prevalence and factors influencing CKD screening is crucial for enhancing early detection and management among PLHIV on ART. **Objective:** To determine the prevalence of CKD screening and associated factors among PLHIV on ART in Dar es Salaam, Tanzania. **Materials and Methods:** A quantitative cross-sectional study was conducted in three regional referral hospitals in Dar es Salaam. The study involved 426 participants. Data was collected through structured interviews and a review of medical records. Descriptive statistics is used to summarize participants' characteristics and screening prevalence, while logistic regression was used to identify factors associated with CKD screening. Ethical approval and protocols were followed. **Results:** Of every hundred participants, 94 had screened for CKD. It showed that a patient with high CD4 count (>350) had thirteen times higher odds of screening, and participants who received screening recommendations from the healthcare providers, had about eighty-nine percent reduced likelihood of screening for CKD. **Conclusion:** The prevalence of CKD screening is high, with about ninety-four percent of participants having been screened for CKD. Having a high CD4 count increases the odds of screening, and healthcare providers' recommendations lowers the odds of screening for CKD.

458. Thomas, C.R. (2025). Clinical Characteristics, Treatment Outcomes, And Mortality Risk Factors in Patients with Post-Operative Enterocutaneous Fistula: A Retrospective Cohort Study. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Postoperative enterocutaneous fistula (ECF) is a challenging surgical complication associated with significant morbidity and mortality. It is essential to understand its clinical profile, treatment outcomes, and mortality predictors for effective management. **Objective:** We evaluated clinical characteristics, treatment outcomes, and mortality determinants among patients with postoperative enterocutaneous fistula at Muhimbili National Hospital. **Methodology:** A retrospective cohort study was conducted among patients treated for postoperative ECF at MNH between January 2016 and December 2024. The collected data included: age, sex, comorbidities, fistula output, surgical indication, surgery type, referral status, sepsis indicators, albumin level,

electrolyte status, and management approaches. Management modalities were categorized into conservative and surgical interventions. Outcomes measured included mortality, fistula closure, length of hospital stay, and intensive care unit (ICU) admission. **Results:** A total of 82 patients included, with a median age of 42 years (IQR: 26-50). Patients aged 18-49 years were 61(74.4%). Females comprised 52 (63.4%) of the cohort. Total number of patients with comorbidities were 14(17.1%), mainly hypertension with 6 (42.9%) and diabetes mellitus with 5 (35.7%). Patients diagnosed at MNH were 47 (57.3%), while the number of referrals from other hospital is 35 (42.7%). High-output fistulas were more common, with 47 (57.3%), than low-output fistulas, with 35 (42.7%). Common complications included anemia 68 (82.9%), hypoalbuminemia, 38 (46.3%), electrolyte imbalance with 34 (41.5%), sepsis 28 (34.1%), and wound dehiscence 14 (17.1%). Most common surgical diagnoses (pre ECF diagnosis) were: uterine fibroids 12 (14.6%), acute appendicitis 10 (12.2%), perforated peptic ulcer disease 9 (11%), visceral injury, and obstructed Labor each with 8 (9.8%). Most frequent primary surgeries (pre-ECF surgery) were: caesarean section 15 (18.3%), appendectomy and total abdominal hysterectomy 10 (12.2%), peptic ulcer disease repair and exploratory laparotomy each with 9 (11%). Number of patients managed conservatively was 43(52.4%, while 39 (47.6%) underwent surgery. Overall mortality was 24 (29.3%); survival rate was 58 (70.7%). The fistula was closed in 52 (63.4%) patients. The length of hospital stay was 30 and 35 days among the surgical and conservative groups, respectively. ICU admission was 13 (15.9%), and the overall mortality was 24 (29.3%), with the majority of the mortality, 16 (19.5%) observed among patients referred from other facilities. **Conclusion:** High-output fistulas were associated with poorer survival outcomes, though treatment modality did not significantly influence mortality. the findings underscore the need for early identification and targeted management of high-risk patients for survival improvement.

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459. Tulinje, S.S. (2025). Effectiveness of birthing ball exercises on labour pain and labour outcomes among women at Newala, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Labour pain is among the most intense forms of pain experienced by women, often affecting the birthing process and maternal outcomes. Birthing ball exercises, a non-pharmacological intervention, have gained global attention for easing labour pain and promoting comfort. However, evidence of their effectiveness remains limited in low-resource settings like Tanzania. Evaluating their impact is vital to inform practice, improve maternal care, and reduce reliance on pharmacological pain relief. Aim of the study: To analyse the effectiveness of birthing ball exercises on labour pain and labour outcomes among labouring women in Newala district council. **Methodology:** A quasi-experiment design was used with 116 participants, equally allocated to intervention group (n=58) and a comparison group (n=58). Participants were selected based on the study criteria through screening of labouring women admitted to the ward, those who met the criteria were recruited after providing consent. Data were collected using a standardized questionnaire, visual analogy scale, partograph and checklist. The intervention group performed four 15-20 minutes birthing ball exercises sessions at one hour interval during active phase of labor (≥5 cm dilation), while the comparison group received standard routine care. Data were analysed

using IBM SPSS Statistics (v27). Continuous data were summarized using mean and standard deviation; categorical data were compared using Pearson's chi-square tests. An independent t-test assessed the effectiveness of the birthing ball exercises on labour pain and duration, with p-value of <0.05 considered statistically significant at 80% power. Multivariate analysis was performed to adjust for confounders and the results are presented in tables. **Results:** The intervention group demonstrated significantly lower pain scores (5.31 ± 1.20) than the comparison group (7.59 ± 1.01), with a large effect size (Cohen's d 1.11; $p < .001$). The mean labour duration was also significantly shorter in the intervention group (4.00 ± 1.47 hours) than in the comparison group (6.88 ± 2.09 hours), $p < .001$, with an effect size of 1.8. Independent t- tests confirmed significant group differences in both pain severity ($p < .001$) and the duration of active first stage of labour ($p < .001$). **Conclusion:** Birthing ball exercises were effective in reducing labour pain and duration, demonstrating both statistical and clinical significance. Therefore, birthing ball exercises can be recommended as a non-pharmacological method in clinical settings to alleviate labour pain and improve labour outcomes.

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460. Uisso, M.S. (2025). Prevalence, Patterns, and Factors Associated with Adverse Events among People Living with HIV/AIDs on Antiretroviral Therapy in Regional Referral Hospitals in Dar es Salaam, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Globally, an estimated 39.9 million people were living with HIV/AIDS in 2023. HIV is a major public health problem in the majority of sub-Saharan African countries, including Tanzania, with a prevalence of 4.4% as of 2023. Antiretroviral therapy has revolutionized the management of HIV infection, hence, has greatly reduced HIV/AIDS related mortality and morbidity. However, the use of antiretroviral therapy is associated with adverse events, which may compromise the effectiveness of the antiretroviral therapy programs. There is scant information on adverse events among people living with HIV/AIDS on antiretroviral therapy in our setting. Therefore, investigating these adverse events and their contributing factors in our settings is essential. **Objective:** This study aimed to determine the prevalence, patterns, and factors associated with adverse events among people living with HIV/AIDS on antiretroviral therapy. **Methodology:** This was a hospital-based cross-sectional study conducted from March to May 2025 at three Regional Referral Hospitals in Dar es Salaam—Mwananyamala, Amana, and Temeke. A total of 479 people living with HIV/AIDS on antiretroviral therapy were enrolled. Data were collected by interviewing the study participants using a semi-structured questionnaire and reviewing the patient files. Data were then analyzed using R (version 4.5) and Python for visualizations. Descriptive statistics summarized socio-demographic and clinical characteristics of the study participants, and the severity of adverse events was assessed by using the Hartwig and Siegel scale. Factors associated with adverse events were analyzed by using a modified Poisson regression model. **Results:** A total of 479 participants were included in the final data analysis. The median age of the study participants was 48 years (IQR: 41, 55), and the majority were female (69.5%). The prevalence of adverse events in the last one year preceding the study was 20.9%. More than half (79%) of the participants experienced mild adverse events, and the most common adverse events experienced were itching/rashes, drowsiness, renal problems, and anemia. Factors

that were significantly associated with adverse events included the use of prophylaxis for opportunistic infections (aPR=2.08, 95% CI: 1.85-3.97; p=0.030), current WHO HIV clinical stage (aPR =1.83, 95% CI: 1.56-3.92; p=0.042), and other comorbidities (aPR=1.65, 95%CI: 1.14- 2.54; p=0.027). **Conclusion and Recommendation:** The study found a high prevalence of adverse events among people living with HIV/AIDS on antiretroviral therapy, and most of the adverse events experienced mild. These findings emphasize the need for healthcare workers in health settings to be vigilant in early detection and prevention of adverse events among people living with HIV/AIDS on antiretroviral therapy, especially those with WHO HIV clinical stage IV, comorbidities, or not receiving prophylaxis for opportunistic infections. Prompt intervention will improve adherence to antiretroviral therapy and treatment outcomes. **Key words:** HIV/AIDs, Antiretroviral therapy, Adverse events, Pharmacovigilance.

461. Uledi, M.A. (2025). Chemotherapy-induced amenorrhoea among premenopausal breast cancer patients, prevalence, associated factors, and health-related quality of life in Tanzania. Muhimbili university of health and Allied Sciences.

Abstract

Background: Globally, there is an increase in breast cancer (BC) diagnoses before the age of 40 years, among individuals who are of reproductive age. One of the most significant side effects of chemotherapy for premenopausal women with BC is Chemotherapy-induced Amenorrhea (CIA). Most of the data on CIA in BC women is from high-income countries, and data in Africa is lacking. This study will provide an understanding of CIA among premenopausal women with BC and improve the health-related Quality of Life (HRQOL) for premenopausal women with BC and CIA after completing treatment. Objective: To determine the prevalence of the CIA, which is defined as cessation of menses within a year after beginning chemotherapy and continuing for at least 12 months, its associated factors, and the influence of CIA on HRQOL among premenopausal women with BC in Tanzania. **Methodology:** A cross-sectional study was conducted from November 2024 to February 2025 among premenopausal BC women who had completed chemotherapy > 1 year. Structured questionnaires were used to collect predictive variables, including age, chemotherapy regimen, and tamoxifen use. HRQOL was assessed using the Short Form Survey-36 questionnaire. Data analysis was done using the computer program SPSS version 23. Categorical variables were summarized using frequencies and percentages. Continuous variables were summarized using the mean and standard deviation, or the median and interquartile range, depending on the distribution. Student t-test was used to compare means, and the Mann-Whitney U test was used to compare medians. Logistic regression was used to identify the predictors of CIA. Multiple linear regression was used in the multivariate analysis to adjust the mean scores of the SF-36 by age at diagnosis, the use of Tamoxifen, and mode of payment. It was also used to compare the mean scores of the SF-36 scales between patients with CIA and those without CIA, as well as the general population. P values < 0.05 was considered statistically significant. **Result:** Among 150 patients with regular menstruation before starting chemotherapy with an age between 36 and 43 years, the prevalence of persistent CIA was 94.5% overall; 89.5% among those patients on Tamoxifen. Age above 40 years at diagnosis (OR: 1.3, 95% CI 1.1-1.5, P < 0.01), tamoxifen use (OR: 8.9, 95% CI 1.3- 59.6, P <0.03), and insured patients (OR: 0.1, 95% CI 0.02-0.9, P <0.03) were statistically significantly

associated with CIA. Only 3.3% received GnRHa post-chemotherapy for ovarian function suppression. None were using contraceptives. No statistically significant differences were found on any SF-36 scales between patients with CIA versus without CIA, despite CIA being associated with low libido, vaginal dryness and insomnia. However, in comparing BC survivors with the general population in Tanzania, mean scores for social functioning (P <0.02) and physical functioning (P <0.01) were significantly better in the general population, whereas the general health scale (P <0.01) was better in BC patients compared to the general population. **Conclusion:** The prevalence of persistent CIA was 94.5% in the entire group. There was a low uptake in using GnRHa for ovarian function preservation, and none of the patients on Tamoxifen were on contraceptives. The CIA did not influence HRQOL, although it was associated with lower libido, increased insomnia, and vaginal dryness. None of the patients was given fertility counselling before chemotherapy. Further prospective studies are needed to evaluate the incidence of the CIA and its impact on HRQOL and prognosis. **Keywords:** Breast Cancer, Chemotherapy-Induced Amenorrhea, Health-related Quality of Life, Premenopausal.

462. Wilfred, D. (2025). Primary school feeding program in the Mara region of Tanzania: assessing the sustainability of school meal programs in public day schools post external support. Muhimbili university of health and Allied Sciences.

Abstract

Background: School feeding programs address malnutrition and enhance educational outcomes in low-resource settings like Tanzania's Mara Region. However, their sustainability after external support ends is uncertain. This study assessed the sustainability of feeding programs in 247 primary public day schools in the Mara Region, two years post the 2021 phase-out of the PCI Food for Education program. **Methods:** A cross-sectional mixed-methods design combined secondary quantitative data from 247 primary schools in Mara Region with qualitative data from 11 FGDs (parents) and 8 KIIs (teachers and officials). Quantitative data from the PCI Comcare database covered meal frequency, diversity, infrastructure, food contributions, school farms/gardens, community engagement, and policy access, analyzed using SPSS and Excel with descriptive statistics and chi-square tests. Qualitative data, collected with pretested tools and thematically analyzed, explored perceptions, barriers, and facilitators of sustainability. Triangulation strengthened validity and reliability. **Results:** Among 247 schools assessed, 37.7% sustained meal provision; two-thirds served meals five days weekly, though 57% relied on maize or porridge. Despite widespread infrastructure (97% kitchens, 77% storerooms), inadequate supplies limited use. School farms (86%) and gardens (43%) were common but low yield. Schools offering five meals weekly were more likely to have food plans ($p < 0.0001$) and storerooms ($p = 0.025$). Community contributions totaled 163,679 kg, led by Butiama DC, but poverty and weak bylaws constrained support. Policy access was moderate (NSFG: 67%, RSFS: 54%), yet enforcement was weak. Qualitative data revealed reliance on harvests, poor maintenance, and economic barriers despite improved attendance and reduced truancy. Conclusion: Structured planning and school farms drive meal frequency, but sustainability remains fragile due to limited meal diversity, low agricultural output, and poor policy implementation. **Recommendations:** include enhancing

planning support, providing agricultural inputs, strengthening community engagement bylaws, and improving policy implementation through training to ensure long-term viability in donor-independent contexts.

463. William, A. (2025). NHIF policy changes: health facility managers' experiences in accredited-primary healthcare facilities and their coping strategies in Kibaha town council, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Since 2019, the Tanzanian National Health Insurance Fund (NHIF) has introduced several policy changes, including adjustments to benefit packages and revised service pricing. However, research evidence on the effect that these reforms have had on service delivery by NHIF-accredited health facilities is lacking. Little is known about service delivery challenges brought about by the reforms and coping strategies adopted by health facility managers. It is this gap in knowledge that this study intended to fill. **Objective:** The general objective of the study was to explore the experiences and coping strategies of Health facility managers in primary healthcare facilities during the implementation of recent NHIF policy changes in Kibaha Town Council, Tanzania. **Methodology:** The study employed qualitative case study design. A total of 16 Health facility managers participated in face to face in-depth interviews. Participants were interviewed about their perspectives, perceived effects and coping strategies on various aspects of NHIF policy changes. All interviews were audio-taped, transcribed verbatim in Swahili and back-translated to English. Data was analysed by inductive thematic analysis. **Results:** The qualitative themes included: extension of dependent coverage to 21 years and private member access to NHIF as progress toward UHC, digitalized claims for efficiency, biometric verification to curb fraud, drug pricing losses, service gaps from excluded benefits, cost-driven prescribing, out-of-pocket recommendations, and facility advocacy against unfavorable NHIF pricing. **Conclusion:** Mixed perceptions emerged on NHIF reforms, with negative effects such as limited access to care due to prescription and service restrictions. Exclusion of previously covered services created gaps, forcing facilities to prescribe alternatives or patients to pay out of pocket. To cope, facilities adopted resilience strategies to sustain service delivery during implementation. Addressing gaps requires stakeholder engagement, fair reimbursement, digital strengthening, and regular monitoring.

464. Yahya, T. M. (2025). Factors associated with persistent malaria transmission in hotspot Shehias of the urban District Zanzibar: a case-control study. Muhimbili university of health and Allied Sciences.

Abstract

Background: Malaria continues to be a significant public health concern globally, with the World Health Organization (WHO) African Region accounting for approximately 94% of all malaria cases and deaths in 2024. In 2023, the WHO estimated 597,000 malaria-related deaths occurred worldwide. Tanzania contributed 3.0% of global malaria cases and 4.1% of deaths, with a

prevalence of 7.3% on the mainland and only 0.4% in Zanzibar. Despite progress toward malaria elimination in Zanzibar, the Urban District continues to report malaria cases, especially in Shehias, indicating ongoing local transmission. Broad Objective: We aimed to assess the factors associated with persistent malaria transmission in hotspot Shehias of the Urban District, Zanzibar. **Methods:** The unmatched case-control design using mixed approaches, which involved 144 participants (36 cases and 108 controls) and 8 key informants sampled by a stratified and purposeful sampling technique from the hotspot Shehias. Data were collected through structured questionnaires and focus group discussions covering socio-demographic, behavioural, environmental, and malaria intervention-related factors. Data were analyzed using STATA version 15, with logistic regression applied to determine associations at a 95% confidence interval and a significance level of $p<0.05$, and qualitative data were analyzed using NVivo 12 software using Thematic analysis. Results: Persistent malaria transmission in the urban hotspot of Shehias was significantly associated with socio-demographic, behavioral, and environmental factors. Participants with no formal education had 2.85 times the odds of infection (95% CI:1.22-6.65) compared to those with secondary education or higher. Households with more than four people had 2.90 times the odds of being infected (95% CI: 1.25-6.74). Behavioral characteristics exhibited particularly strong relationships, with the largest risks seen among individuals who never used ITNs (aOR=9.65, 95%CI:3.25-28.6), lacked malaria preventive information (aOR=6.10, 95%CI:1.95-19.1), or engaged in nocturnal outdoor activities (aOR=5.60, 95%CI:1.60-19.6). The environmental risks were: Proximity to water bodies within 100m elevated odds by 12.8-fold (95% CI: 3.75-43.7), whereas poor-quality dwellings (≥2 structural flaws) revealed a 25.6-fold risk elevation (95% CI: 6.30–104). FGDs revealed widespread negative attitudes toward ITN use among men, frequent nighttime outdoor activities, misconceptions about ITNs, poor housing conditions, and unhygienic environments with trash and overgrown bushes—all contributing to continued malaria transmission. **Conclusion:** A combination of socio-demographic, behavioral, and environmental factors contributes to the persistence of malaria transmission in Zanzibar's urban regions. Community beliefs and practices, particularly men's usage of ITNs, outdoor activities, and approaches to environmental hygiene have a significant impact on continued transmission in hotspot Shehias. These findings emphasize the need to develop and implementing targeted treatments that address these contextual determinants in order to speed malaria elimination in Zanzibar.

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465. Yobu, D.M. (2025). Contributors of corruption in public primary health facilities in Geita Town Council, Geita Region: A qualitative study. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Corruption in primary healthcare services is one of the factors hindering human development, depriving human rights, that increase poor health-seeking behaviours and poverty in communities practicing out-of-pocket payments, hence reducing productivity due to ill health and shortening life expectancy. The dynamic intersection of multicultural healthcare services, a large informal sector, and a poor regulatory environment has provided conditions favourable for ‘corruption’ in most sub-Saharan countries and some Southeast Asia regions. Corruption works to

undermine the UHC goals of achieving equity, quality, and responsiveness, including financial protection, especially while delivering healthcare services from primary to tertiary health facility levels. **This study aims:** to explore contributors to corruption in primary public health facilities in Geita Town Council, March – June 2024 **Methodology:** This qualitative case study involved 3 Key Informant Interviews (KII) from the Geita Town Council hospital, in charge of outpatient and inpatient departments. Two more KII were done at the health centre and the dispensary. We also conducted 2 IDIs with three Health Facilities Governing Committee members, each with 2-3 members, and 3 FGDs with the individual healthcare recipients, 5 -8 by gender and age bands taking 45 to 90 minutes, respectively. The interviews were recorded, transcribed verbatim, and coded and analysed thematically. Emerging themes were included using a deductive approach. The report consists of quotes obtained from the analysis. **Results:** The study highlights various forms of corruption, reporting long patient waiting times and congestion at health facilities as factors influencing corruption for better services. Additionally, the study underscores the role of social and cultural factors in informal payments within healthcare, noting the impact of individual beliefs and attitudes on engaging in corrupt practices. The findings also stress the contribution of pre-existing corruption and community attitudes in perpetuating corrupt practices within health facilities. **Conclusions:** Corruption practices in healthcare are detrimental to effective healthcare delivery in the Geita town council and other similar regions in Tanzania and elsewhere. The patient's decision to offer a gift, gratitude, or pay informally is influenced by the social and cultural factors that encourage gratitude for the good services offered. However, health factors such as healthcare providers, extended queues and long waiting time could drive one to solicit or offer corruption; it is evident that a multifaceted approach is required to address this issue of an existing corrupt environment.

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466. Yonah, G.A. (2025). Magnitude and factors associated with adherence to secondary antibiotic prophylaxis in children with rheumatic heart disease at the Jakaya Kikwete Cardiac Institute. Muhimbili University of Health and Allied Sciences.

Abstract

Introduction: Rheumatic heart disease (RHD) is the most common acquired heart disease in children and remains a major cause of preventable morbidity and mortality in children and young adults in Low-and Middle-Income countries (LMIC). Despite being preventable, RHD remains a major public health concern in (LMIC). Secondary antibiotic prophylaxis using intra-muscular Benzathine penicillin G injection (BPG) is a cost-effective measure to prevent disease progression, however, adherence to secondary prophylaxis in our pediatric population is not well documented, as well as the associated factors. **Objective**: To determine the magnitude of adherence to secondary antibiotic prophylaxis among children with RHD attending at the Jakaya Kikwete Cardiac Institute (JKCI). Furthermore, the study aimed to explore the factors associated with adherence to secondary antibiotic prophylaxis among children with RHD attending JKCI. **Methodology** This was a hospital based, mixed-method study involving 221 children with RHD, on antibiotic prophylaxis initiated at least 1 year prior to the study date. The qualitative part involved 8 In-Depth interviews (IDI) to the purposively selected participants, to ascertain factors affecting the adherence to the BPG. Data on prophylaxis adherence was collected through semi-

structured surveys. Adherence was defined as receiving atleast 80% of the scheduled annual injections. Multivariate logistic regression was used to identify predictors of poor adherence, and p value of <0.05 was considered statistically significant. The two methodologies were conducted sequentially, and the IDI participants were recruited based on their survey findings after the sub-analysis. Quantitative data were analyzed using the STATA version 15. Logistic regression was used to identify the factors associated with adherence to the secondary antibiotic prophylaxis. Qualitative data from the IDIs were thematically analyzed with the support of NVIVO software version 11. **Results**: Among the 221 children enrolled,144 (69%) were found to have good adherence, and factors significantly associated with poor adherence included living far from the health facility (AOR = 3.4, 95% CI: 1.7–6.86), use of insurance to cover for health services (AOR = 0.7) and absence of a special record-keeping notebook (AOR = 0.56, 95% CI: 0.27–1.12). Common reasons for missed doses included forgetfulness (46.1%), fear of injection pain (16.5%), and lack of knowledge about prophylaxis duration (191, 86.43%). The in-depth interviews conducted brought to surface issues of healthcare workers' competence in administering the injection, and painful nature of the injection itself. **Conclusion:** This study highlights that there is suboptimal adherence to secondary antibiotic prophylaxis in children with RHD at our settings, with multiple barriers facing the non-adherent participants.

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467. Yongolo, A.J. (2025). Magnitude and factors associated with prediabetes among the adult population in Mbeya, Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Prediabetes is one of the major public health concerns worldwide. It is considered a transitional risk factor for diabetes. There are limited studies done on prediabetes in Mbeya. Mbeya ranks among the top three regions in Tanzania with high prevalence of overweight and obesity rates, affecting 28% of men and 53% of women, respectively. Understanding prediabetes can play a key role in reducing the risk of developing diabetes, which is one of the four most prevalent non-communicable diseases in Tanzania. Importantly, prediabetes is a condition that can be managed and potentially reversed with appropriate measures. **Objective:** The main objective was to determine the magnitude and factors associated with prediabetes among the adult population in Mbeya, Tanzania **Methodology:** An analytical cross-sectional study was employed among 320 adults in Mbeya city and Mbeya district council using a multistage stratified simple random sampling method. A semi-structured questionnaire was used for data collection on sociodemographic, behavioral, nutritional, and clinical factors, followed by blood glucose, blood pressure, and anthropometric measurements. Data analysis was done using STATA version 17. Descriptive statistics (frequency and percentage) were used to estimate the prevalence of prediabetes, and modified Poisson regression was used to identify factors associated with prediabetes at a significance level of 5% (p **Results:** A total of 320 adults in Mbeya region were recruited for the study. The mean age was 52.3 years (SD=17.53), ranging from 19 years to 90 years, and the majority group aged 60 years and above (38.1%). Participants were recruited from Mbeya City Council (59.4%) and Mbeya District (40.6%). The overall prevalence of preadibetes was 26.6%. Alcohol consumption (aPR=1.10, 95%CI: 1.02-1.19), family history of diabetes (aPR=1.1, 95%CI: 1.02-1.19), obesity (aPR=1.12, 95%CI: 0.90-1.45), low level (aPR=1.53,

95%CI:1.41-1.68), and moderate level (aPR=1.13, 95%CI:1.06-1.11) of physical activity were found to be associated with preadibetes among the adult population in Mbeya. **Conclusion:** The prevalence of prediabetes among the adult population in Mbeya, Tanzania, was high. This study revealed that alcohol consumption, family history, obesity/high BMI, and physical inactivity were factors associated with prediabetes. A comprehensive evidence-based intervention is needed to reduce the burden of prediabetes, which remains a significant public health concern. Since prediabetes is considered a reversible condition, timely intervention can help prevent its progression to type 2 diabetes and reduce the long-term health and economic impact on individuals and the health system.

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468. Yongolo, A.J. (2025). Magnitude And Factors Associated with Prediabetes Among the Adult Population in Mbeya, Tanzania. Muhimbili University of Health and Allied Science.

Abstract

Background: Prediabetes is one of the major public health concerns worldwide. It is considered a transitional risk factor for diabetes. There are limited studies done on prediabetes in Mbeya. Mbeya ranks among the top three regions in Tanzania with high prevalence of overweight and obesity rates, affecting 28% of men and 53% of women, respectively. Understanding prediabetes can play a key role in reducing the risk of developing diabetes, which is one of the four most prevalent non-communicable diseases in Tanzania. Importantly, prediabetes is a condition that can be managed and potentially reversed with appropriate measures. **Objective:** The main objective was to determine the magnitude and factors associated with prediabetes among the adult population in Mbeya, Tanzania. **Methodology:** An analytical cross-sectional study was employed among 320 adults in Mbeya city and Mbeya district council using a multistage stratified simple random sampling method. A semi-structured questionnaire was used for data collection on sociodemographic, behavioral, nutritional, and clinical factors, followed by blood glucose, blood pressure, and anthropometric measurements. Data analysis was done using STATA version 17. Descriptive statistics (frequency and percentage) were used to estimate the prevalence of prediabetes, and modified Poisson regression was used to identify factors associated with prediabetes at a significance level of 5% ($p<0.05$). **Results:** A total of 320 adults in Mbeya region were recruited for the study. The mean age was 52.3 years (SD=17.53), ranging from 19 years to 90 years, and the majority group aged 60 years and above (38.1%). Participants were recruited from Mbeya City Council (59.4%) and Mbeya District (40.6%). The overall prevalence of prediabetes was 26.6%. Alcohol consumption (aPR=1.10, 95%CI: 1.02-1.19), family history of diabetes (aPR=1.1, 95%CI: 1.02-1.19), obesity (aPR=1.12, 95%CI: 0.90-1.45), low level (aPR=1.53, 95%CI:1.41-1.68), and moderate level (aPR=1.13, 95%CI:1.06-1.11) of physical activity were found to be associated with prediabetes among the adult population in Mbeya. **Conclusion:** The prevalence of prediabetes among the adult population in Mbeya, Tanzania, was high. This study revealed that alcohol consumption, family history, obesity/high BMI, and physical inactivity were factors associated with prediabetes. A comprehensive evidence-based intervention is needed to reduce the burden of prediabetes, which remains a significant public health concern. Since prediabetes is considered a reversible condition, timely intervention can help prevent its

progression to type 2 diabetes and reduce the long-term health and economic impact on individuals and the health system.

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469. Yusuph, D.Y. (2025). Perioperative Anaesthesia-Related Complications and Associated Factors Among Under-Five Children Undergoing Surgery at Muhimbili National Hospital and Muhimbili Orthopaedic Institute, Tanzania. Muhimbili University of Health and Allied Science.

Abstract

Background: Providing anaesthesia to children is considered safe when administered by competent and well-trained paediatric anaesthesia professionals in a well-organized environment. Safe anaesthesia practice in children aims at early detection and prevention of complications. Perioperative anaesthesia-related complications are a significant concern globally, leading to substantial morbidity and mortality. However, data on this issue is scarce in our local area. This lack of local information highlights the need for research to identify the factors contributing to these complications, ultimately aiming to improve patient care and outcomes. **The aim of the study:** The study aimed to evaluate perioperative anaesthesia-related complications and associated factors among under-five children undergoing surgery at MNH and MOI. **Methodology:** A cross-sectional study was conducted at MNH-Upanga and MOI, involving 290 under-five years of age. Data coding and analysis were performed using SPSS version 27. Categorical variables were analysed and summarized using a frequency distribution. The Pearson Chi-square ($\chi 2$) test and logistic regression was used to determine the statistical association between perioperative anaesthesia related complications and independent variable factors, by using p - value of < 0.05 and Odds Ratio (OR) along with its 95% Confidence Interval (95% CI) was calculated to indicate the likelihood of occurrence. **Results:** Out of the 290 participants in the study, 47.2% experienced perioperative anaesthesia related complications. 16.2% had complications preoperatively, 39.0% intraoperatively, and 30.3% postoperatively. There was a statistically significant association between perioperative anaesthesia related complications and preoperative anaemia [(p= < 0.012) , aOR (0.16), 95% CI (0.05,0.42)], prolonged fasting [(p= <0.001), aOR (0.07) 95% CI (0.02,0.35)], preexisting medical conditions [(p= 0.021), aOR (0.18), 95% CI (0,04,0.78)], prolonged duration of procedure (5-6 hours) [(p= 0.007), aOR (0.05), 95 CI (0.01, 0.44)], complex airway management [(p=0.020), aOR (0.15), 95% CI (0.03, 0.74)], and availability of standard operational guideline [(p= 0.014), aOR (0.48) 95% CI (0.27,0.86] were notably associated with perioperative anaesthesia related complications. **Conclusions and Recommendations:** The findings revealed that perioperative anaesthesia related complications are still a challenge in our locality. The study reveals several factors were linked to perioperative anaesthesia complications, including ASA physical status, pre-existing medical conditions, preoperative anemia, prolonged fasting, (W.H.O) surgical safety checklist, urgency of surgery, long procedure times, complex airway management, and operational guidelines. However, these factors were associated with decreased adjusted odds ratios of perioperative anaesthesia-related complications. To improve patient outcomes, hospital management should offer on-the-job training in safe paediatric anaesthesia to anaesthesia providers. This will increase their competency in caring for children. Further research is needed to

determine how these factors influence the occurrence of perioperative anaesthesia-related complications.

470. Zaid, L. A. (2025). Implementation Fidelity of Water Supply Under Zanzibar's Comprehensive Cholera Elimination Plan: A Qualitative Case Study, Muhimbili University of Health and Allied Sciences.

Abstract

Background: It is essential to consider how interventions are implemented and how adherence to the program contributes to the effectiveness of the intervention. Despite the efforts, Zanzibar still experiences a resurgence of cases of cholera, which raises concerns about the program's effectiveness based on the implemented intervention on water supply. Despite the role of Water, Sanitation, and Hygiene interventions in cholera, there is limited research examining the Implementation fidelity of Zanzibar's water supply intervention under the Zanzibar Comprehensive Cholera Elimination Plan. Assessing the Zanzibar Water Authority's fidelity to the water supply program is crucial in determining whether deviations in execution contribute to persistent cholera outbreaks based on the Zanzibar Comprehensive Cholera Elimination Plan. **The objective of the study:** To evaluate the implementation fidelity of water supply under Zanzibar ‘s Comprehensive Cholera Elimination Plan as implemented by Zanzibar Water Authority. **Methods:** A case study exploratory design was employed, using a qualitative approach, to assess the implementation fidelity of water supply interventions under the Zanzibar Comprehensive Cholera Elimination Plan at the Zanzibar Water Authority in Unguja Urban District. The study population consisted of individuals in technical, laboratory, project management, and administrative roles, with a minimum of four years of experience related to water supply interventions. A total of fifteen participants at the Zanzibar Water Authority were purposefully selected and interviewed using semi-structured interview guides. Data collection continued until data saturation was reached. Data were collected through face-to-face interviews, which were conducted in Kiswahili, lasting 30-60 minutes, and later transcribed and translated into English. Data were analyzed thematically using Braun and Clarke's six-step approach, ethical clearance was obtained, and measures for trustworthiness were ensured and rigorously applied. **Findings**: Some technical staff understood Zanzibar Comprehensive Cholera Elimination Plan goals, but other staff had limited knowledge of the program objectives, resulting in poor xiii coordination. Additionally**,** Zanzibar Water Authority successfully delivered water supply interventions, such as chlorination, rehabilitation of infrastructure, and water quality monitoring. Institutional factors, including a shortage of equipment, power outages, inadequate implementation of internal guidelines, and a lack of skilled personnel, hinder the sufficient implementation of the water supply. **Conclusion:** Based on study findings, institutional factors seem to hinder the effective implementation and threaten the sustainability of the intervention. Addressing organizational barriers is crucial for improving the program's fidelity, thereby enhancing water service delivery and achieving the intended goal of the Zanzibar Comprehensive Cholera Elimination Plan in cholera elimination in Zanzibar.

471. Zilahulula, J. (2025). Prevalence and risk factors associated with hypertension among people living with HIV on antiretroviral therapy in Kinondoni district, Dar es salaam

Tanzania. Muhimbili University of Health and Allied Sciences.

Abstract

Background: In Tanzania, the prevalence of hypertensive patients among people living with HIV (PLHIV) has been documented in various studies. Research indicates that approximately 19.6% to 26.76% of PLHIV in Tanzania have hypertension, with a systematic review highlighting a prevalence of 26.76% in the region. Other NCDs such as diabetes, studies report a prevalence ranging from 4.2% to 6.9% among PLHIV, with some regional variations noted, such as 6.9% in northern Tanzania. These figures underscore the growing burden of NCDs among PLHIV in Tanzania, particularly as access to ART increases life expectancy and the risk of such comorbidities. **Objective:** To investigate the prevalence of hypertension and risk factors associated with hypertension among individuals with HIV on ART in Kinondoni District. **Methods and Tools:** This Analytical cross-sectional study was conducted in Kinondoni District, focusing on CTCs for PHIV. It included 376 PLHIV aged 18 years and above on ART for more than 12 months, selected via a multi-stage sampling technique. The study examined hypertension as a dependent variable, with clinical, lifestyle and demographic factors as independent variables. Data was collected via a questionnaire with structured questions and analyzed using descriptive statistics and inferential statistics. STATA software V.18 was used, with a p-value < 0.05 considered significant. **Results:** Among 376 PLHIV on ART in Kinondoni District, the prevalence of hypertension was 35.4% (95% CI: 30.6% - 40.2%). In multivariable analysis, modifiable risk factors included alcohol consumption (AOR = 2.27; 95% CI: 1.40–3.69; p=0.001), and physical inactivity (AOR = 1.85; 95% CI: 1.53–4.35; p=0.001). Significant non-modifiable and clinical factors were older age (AOR = 1.06 per year; 95% CI: 1.04–1.09; p<0.001) and a longer duration on ART (AOR = 1.08 per year; 95% CI: 1.03–1.15; p=0.001). In univariate analysis, males had higher odds of hypertension than females (COR = 2.01; 95% CI: 1.29–3.13; p=0.002). **Conclusion** and recommendation: The study found a high burden of hypertension (35.4%) among PLHIV on ART, with significant associations with alcohol use, physical inactivity, prolonged ART duration and older age. These findings stress the urgent need for integrated HIV and NCDs care, emphasizing screening and management. Targeted efforts should focus on older adults, alcohol users and individuals who are smoking to reduce long term risks.

472. Zubeir, Z. O., (2025). Magnitude, sonographic patterns and predictors of NAFLD among adult patients with T2DM at MNH Mloganzila. Muhimbili University of Health and Allied Sciences.

Abstract

Background: Non-alcoholic fatty liver disease (NAFLD) is a common liver condition marked by fat accumulation in the liver of individuals with minimal or no alcohol intake. It is highly prevalent worldwide, especially in T2DM patients. Reliance on normal liver enzyme levels for diagnosis often results in underdiagnoses, emphasizing the need for better diagnostic methods. Although liver biopsy is the gold standard, its invasiveness limits its use. Ultrasonography is preferred in clinical practice for diagnosing NAFLD due to its non-invasive nature. **Objective:** To determine the magnitude, sonographic patterns and predictors of NAFLD among adult patients with type 2

diabetes mellitus at Muhimbili National Hospital (MNH), Mloganzila. **Material and Methods:** A cross-sectional hospital-based study design was conducted from March to August 2024 involving 318 consented adult patients with T2DM at MNH Mloganzila. In this study, a structured questionnaire was used to collect social demographics, clinical, sonographic and laboratory information. The obtained data were processed and analyzed using SPSS version 26. Descriptive analysis was performed, and bivariate associations were assessed using chi-square and Mann-Whitney U tests where applicable. Variables with p-values < 0.05 were included in the final model. Predictors of NAFLD were identified using multivariable logistic regression, with significance set at $p < 0.05$ **Results:** The median age of participants was 62 years (IQR: 54.0–68.0), and the prevalence of NAFLD was 18.9%, with females being more affected. The most common pattern was diffuse fatty accumulation (96.7%). Predictors of NAFLD included large waist circumference [aOR 8.78, 95% CI (0.81–9.40), $p < 0.001$], high total cholesterol [aOR 1.47, 95% CI (0.04–4.07), $p <0.001$], and increased HbA1 [aOR 3.2, 95% CI (0.13–7.46), $p = 0.011$]. **Conclusion**: The study found that NAFLD was relatively common in our study population with higher prevalence among females. The most frequently observed pattern is diffuse fatty accumulation. Significant predictors of NAFLD include large waist circumference, high total cholesterol, and increased HbA1C level. **Recommendation**: Incorporate routine ultrasound screening for NAFLD in diabetes management protocols, particularly for patients with central obesity, dyslipidemia, and poor glycemic control. Strengthening interventions targeting glycemic control, lipid profile and weight management to reduce the burden of NAFLD in this population.

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