

**NURSES' KNOWLEDGE AND PRACTICE ON CARE OF
CRITICALLY ILL ADULT PATIENTS IN WARD SETTINGS AT
MNAZI MMOJA HOSPITAL, ZANZIBAR**

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**MSc. Nursing (Critical Care and Trauma) Dissertation
Muhimbili University of Health and Allied Sciences.
October, 2017**

Muhimbili University of Health and Allied Sciences

Department of Clinical Nursing



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By

Hasina Mohammed Suleiman

**A Dissertation submitted in (Partial) Fulfillment of the Requirement for the
Degree of Masters of Nursing (Critical Care and Trauma) of**

**Muhimbili University of Health and Allied Sciences
October, 2017**

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences in Dar es Salaam, a dissertation entitled “*Nurses’ knowledge and practice on care of critically ill adult patients in ward settings at Mnazi Mmoja Hospital, Zanzibar*”, in (partial) fulfillment of the requirement for the degree of Master of Science in Nursing (Critical Care and Trauma) of Muhimbili University of Health and Allied Sciences.

Dickson Ally Mkoka PhD, RN

(Supervisor)

Date: _____

DECLARATION AND COPYRIGHT

I, **Hasina M. Suleiman** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award

Signature.....

Date

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ACKNOWLEDGEMENTS

I am thankful to the almighty God for His help and blessings in everything I have done for this dissertation and in my life.

I would like to express my sincere gratitude and appreciation to my supervisor Dr Dickson Ally Mkoka for his good supervision, help and encouragement during the preparation of study proposal and this dissertation.

I am also grateful to everyone in the Department of Clinical Nursing who gave me their assistance and guidance during development of this dissertation.

To my family, I say thank you for your love and support and understanding.

My sincere appreciation goes to my colleague in this course for their full support and cooperation throughout the course.

Last but not least, I'm very grateful to my sponsor UNFPA through Ministry of Health – Zanzibar for their support financially.

DEDICATION

This work is dedicated to my lovely husband Dr. Jamala Adam Taib for his full support, understanding and tolerance of my absence during the whole course of my master's studies. This dissertation is also dedicated to my lovely Mother Salha Salum Rashid for support during their lives, gave me a good education foundation that has brought me to this level and continue to guide in my life.

ABSTRACT

Background: Many critically ill patients cared within the ward because of inadequate spaces in ICU. Nurses working in ward settings have been responsible for caring critically ill patients as well as preventing further deterioration of the patients. However, little is known on their knowledge, practices and challenges they face in caring such patients.

The aim of the study: To assess nurse's knowledge, practice and challenges on the care of critically ill patients in ward settings at Mnazi Mmoja Hospital, Zanzibar.

Methodology: This is a descriptive, hospital-based cross-sectional study, conducted at Mnazi Mmoja Hospital – Zanzibar and recruited 172 nurses who were working in different wards and taking care of adult critically ill patients. Data were collected by using a questionnaire to assess knowledge and challenges are faced by the nurses in fulfilling their duties and checklist for the observation during caring of critically ill patients. Descriptive statistical data analysis from SPSS version 20 such as frequencies and percentages were used and the findings were summarized and presented in tables, pie charts, bar chart, and histograms.

Result: The participants age ranged from 20 to 50 years with the majority of them were aged below thirty years (52.3%) and with the male to female ratio of 1:3.5. More than half of the nurses (83.1%) had Diploma level education, 58.7% of participants had working experience of one to five years and almost two-thirds (62.8%) had not attended in-service training. The mean score of nurses knowledge on assessment of critically ill patients was 56.8% (SD =17.12). About (91.3%) of participants knew ABCDE as the initial approach of assessing critically ill patients. Half of the participants (51.2%) reported knowing that airway is the first parameter to assess when patient condition is deteriorating, though only (19.9%) knew to confirm patent airway, 44.2% knew to assess circulation and only 29.1% reported knowing all parameters used to assess peripheral perfusion. Likewise, (54.1%) were not knowledgeable on the parameter for high risk or deterioration of patients. Although (84.3%) of participants agreed that they do care critically ill patients in the wards, 40.7% participants used ABCDE approach on an

initial assessment of critically ill patients and 38.4% done intervention post problem identification. In addition, the majority of participants (84.9%) measure vital signs although not all parameters were measured especially the level of consciousness and saturation level were often not measured. and only 26.2% monitored vital signs on regular basis, 32.6% done documentation and 64.5% delivered reports at the time of handover but not systematic. Major challenges for caring of critically ill patient were inadequate equipments or materials (91.3%), shortage of staff (72.1%) and lack or poor knowledge and skills (37.2%),

Conclusion & Recommendation: Despite the majority of nurses care critically ill patients, the only few have on job training. There are inadequate knowledge and sub-optimal practice on care of critically ill patients in the ward, thus it is mandatory to have on job training, CPR course, to develop and review the existing guideline and tools and to use them routinely when providing care in the ward.

TABLE OF CONTENTS

CERTIFICATION	iii
DECLARATION AND COPYRIGHT	iv
ACKNOWLEDGEMENTS	v
DEDICATION	vi
ABSTRACT	vii
LIST OF TABLES	xii
LIST OF FIGURES	xiii
ABBREVIATIONS	xiii
DEFINITION OF TERMS.....	xv
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.01 BACK GROUND	1
1.1 PROBLEM STATEMENT	4
1.1.1 CONCEPTUAL FRAMEWORK.....	5
1.2 SIGNIFICANT OF THE STUDY	7
1.3 RESEARCH QUESTIONS.....	8
1.4 STUDY OBJECTIVES.....	8
1.4.0 Broad objective	8
1.4.1 Specific Objectives	8
CHAPTER TWO	9
2.0 LITERATURE REVIEW	9
2.1 Nurses knowledge of assessment of critically ill patients.....	9
2.2 Nurses practice on observation of critically ill patients	10
2.3 Challenges of nurses on carering critical ill patient	13
CHAPTER THREE.....	15
3.0 RESEARCH METHODOLOGY.....	15
3.1 Research Design.....	15
3.2 Study Setting.....	15
3.3 Study Population.....	16
3.4 Sample size	16

3.5 Sampling Procedure	16
3.6 Inclusion Criteria	17
3.7 Exclusion Criteria	17
3.8 Study Variables/Measures	17
3.9 Data Collection Instruments.....	18
3. 10 Validity	19
3.11 Reliability.....	19
3.12 Research Team.....	20
3.14 Ethical Considerations	21
CHAPTER FOUR.....	22
4.0 RESULTS	22
CHAPTER FIVE.....	36
5.0 DISCUSSION	36
5.1 Demographic characteristics.....	36
5.2 Nurse’s knowledge related to the initial assessment of critically ill patients.....	36
5.3: Nurses practice on observation of critically ill patients in ward.....	38
5.4: Challenges of nurses on caring critical ill patient.....	40
5.5: CONCLUSION.....	41
5.6: Limitation of the study:.....	41
5.7: Implications of the study to the nursing practice.	41
5.8: RECOMMENDATIONS	42
REFERENCES.....	44
APPENDICES:	49
APPENDIX A1: QUESTIONNAIRE ENGLISH VERSION	49
APPENDEX A2: DODOSO LA KISWAHILI.....	55
APPENDIX B1: OBSERVATION CHECKLIST	62
APPENDIX B2: ORODHA YA UCHUNGUZI.....	63
APPENDIX C1: INFORMED CONCENT	64
APPENDIX C2: FOMU YA RIDHAA	66
APPENDIX D1: LETTER FOR ETHICAL CLEARANCE	68
APPENDIX D2: INTRODUCTION LETTER.....	69

APPENDIX E1: PERMISSION LETTER FROM MINISTRY OF HEALTH –
ZANZIBAR..... 70

APPENDIX E2: PERMISSION LETTER FROM MNAZI MMOJA HOSPITAL –
ZANZIBAR..... 71

LIST OF TABLES

Table 1: Sociodemographic characteristics of participant	23
Table 2: Participant knowledge on initial basic assessment of critically ill patients	25
Table 3: Participant knowledge on normal range of physiological parameters of adult vital signs	26
Table 4: Participant knowledge on recognition of high risk patients, interpretation of GSC, normal urine, output and maximum oxygen saturation in ambubag	27
Table 5: Participant knowledge on initial management of critically ill patients	28
Table 6: Proportion of knowledge level of participants related to care of critically ill patients	29
Table 7: Distribution of participants practice through observation	33
Table 8: Challenges faced by nurses who care for critically ill patients	35

LIST OF FIGURES

Figure 1: Conceptual frame work	6
Figure 1: Distribution of general knowledge score of nurses on care critically ill patients.....	29
Figure 2: Proportion of nurses who assess critically ill patients	30
Figure 3: Proportion of nurses who use guideline/tool when assessing critically ill patients.....	30
Figure 4: Frequency of checking vital signs to critically ill patients	31
Figure 6: Level of general practice on care critically ill patients	34

ABBREVIATIONS

ABCDE	Airway, Breathing, Circulation, Disability, Exposure
AVPU	Alert, voice, pain, unresponsive
CPR	Cardiopulmonary resuscitation
EWS	Early warning sign
ICU	Intensive Care Unit
MMH	Mnazi Mmoja Hospital
MUHAS	Muhimbili University of Health and Allied Sciences

DEFINITION OF TERMS

Critically ill patients - are those patients who are at risk of actual or potential life threatening health problem (Elliot et al., 2012).

Suboptimal care - Lack of knowledge on airway, breathing and circulation that result in aspects of care being missed, misinterpreted and mismanaged (McQuillan et al., 1998).

Adverse events - Unintended injuries or complications resulting in death, disability or prolonged hospital stay that arise from health care management (Kyriacos, Jelsma, & Jordan 2011).

Early warning score - Is a tool for bed side evaluation which is determine degree of illness of patient, based on six physiologic parameters: systolic blood pressure, pulse rate, respiration rate, oxygen saturation, temperature, AVPU score (Subbe et al., 2001).

OPERATION DEFINITION

Nurse's practice - is the process whereby nurses able use ABCD initial assessment, to intervene abnormalities identify, monitor of vital signs critically ill patients. Includes monitoring of Blood Pressure, Pulse rate, oxygen saturation, temperature, level of consciousness (AVPU) and Urine output, frequency of checking vital sign, plan of monitoring vital signs, documentation, Delivery of report on hand over critically ill patients.

Knowledge of nurses – is the ability of nurses to use initial approach ABCDE to assess critically ill patients and interpret physiological parameters of the patients. Nurses should know the normal and abnormal range of vital signs and able to interpret parameters.

Critically ill patients - are all patients with actual or potential life threatening condition such as those with heart failure, breathing problems, bleeding, obstetric emergency, post-operative patient and post ICU patients cared in the wards.

CHAPTER ONE

1.0 INTRODUCTION

1.01 BACK GROUND

Critical illness is any disease process, which causes physiological instability leading to disability or death within minutes or hours. Neurological and cardio respiratory systems generally have the immediate life-threatening effects. Fortunately, such instability can be reliably detected through simple clinical observations such as level of consciousness, respiratory rate, heart rate, blood pressure and urinary output (Frost & Wise, 2007).

Critically ill patients are those patients who are at risk of actual or potential life-threatening health problem (Elliot, Aitken, & Chaboyer, 2011). There is different care provided to critically ill patients which include assessment, monitoring of vital signs, interpretation of physiologic parameters, evaluation of patient information including physical and psychological response, communication of medical team members and families of the patients. This kind of comprehensive care must be provided by knowledgeable, skilled and experienced nurse (Galley& O’Riordan, 2003).

Critically ill patients require care from staffs who are competent in monitoring, measuring, interpreting and responding to multiple parameter indicators in a logically structured manner and this can achieve through Airway, Breathing, Circulation, Disability, and Exposure (ABCDE) assessment (Barker & Smith, 2015). Furthermore, the literature shows that knowledge and skills of using ABCDE framework are important for nurses working in the acute unit because it can assist nurses to do a thorough assessment of acutely ill patients and it is a recommended tool for both nurses and doctors (Atkinson, 2013).

Now-days, critically ill patients are often nursed within medical and surgical wards because of inadequate bed capacity at ICU (Jonsson et al., 2011). Different studies reported that patients admitted from general wards to the intensive care unit have higher mortality than those from the Emergency department and operating theatre (Goldhill et

al., 2005). However, other studies show that 80% of critically ill patients who are cared within the ward receive sub-optimal care. This occurs due to lack of knowledge on systematic assessment approach by nurses and other medical staff in managing airway, breathing and circulation. Another reason for sub-optimal care includes lack of recognition of deterioration due to poor assessment skills in both nursing and medical staff, and failure to appreciate the clinical urgency related to the ability to determine which vital signs should be acted upon immediately (Quirke, Coombs & McEldowney, 2011).

Patients admitted to the general wards are at risk of deterioration in their clinical conditions due to change of their physiological state. Majority of acute critical illnesses develop slowly, over many hours and are associated with the early presence of abnormal vital signs like fall or rise of temperature, blood pressure, pulse rate, respiration rate, oxygen saturation and level of consciousness, which are known as the precursor of critical illness. If patients physiological abnormalities are not recognized earlier or with non-competent skilled nurses, the patient's condition may deteriorate further and/or lead to death (Atkinson, 2013). Effective observation of ward patients is the first key step in identifying the deterioration of patients and effectively managing their care (Odell, Victor, & Oliver, 2009). Unfortunately, in most wards, vital signs measurement is taken infrequently even in sick patients. As a result, nurses fail to recognize patients who deteriorate hence unable to treat them correctly (Gwinnutt & Smith, 2010).

The assessment of simple vital signs helps to predict and prevent cardiac arrest. It was insisted that once cardiac arrest occurs in the hospital, only 20% of patients survive to go home. Nurses failed to assess, interpret and monitor patients in the wards, finally the cardiac arrest will occur which is not usually a sudden, unpredictable event because patients show slow and progressive deterioration involving hypoxemia and hypotension that is unnoticed or poorly managed by ward staff (Soar et al., 2015).

In many hospitals in the world, nurses use different observation tool to assist in early detection of critically ill patients in order to provide escalation of care, increase vital signs monitoring, improve communication between nursing staff and doctors, help to

alert ward staff in recording, documentation and to flag-up patients who need to be given immediate priority. The primary purpose is to prevent delay in an intervention or transfer of critically ill patients (Gardner-Thorpe et al., 2006). There is an evidence of many studies which show that introduction of Early Warning Sign (EWS) tool has vast improvement in vital signs documentation, reduction of unplanned ICU admission and hospital death (Hammond et al., 2013)

According to observations conducted at Mnazi Mmoja Hospital Zanzibar, care of critically ill patients in the ward poses some challenges including inadequate competent skilled nurses to care such patients in ward settings. Currently, there are increased number of patients who are critically ill being admitted in general wards. These patients are basically cared by registered nurses who provide care according to their basic knowledge. For the reasons mentioned above the researcher investigated level of knowledge and practice of nurses on caring for critically ill patient in the ward and assess the challenges they encounter as they fulfill this important role.

1.1 PROBLEM STATEMENT

Care of critically ill patient in the ward is a challenging process, especially in the low resource countries. This is due to deficiency or inadequate specialized or competent skilled personnel and sub-optimal monitoring of patients closely. As the nurses are in constant contact with patients, they are in prime position to identifying problems at an early stage with the use of systematic patient assessment to identify those who deteriorate physiologically.

According to the standard of care, systematic assessment framework is used to assess critically ill patient who is deteriorating and also the use of early warning tools (EWS) as an observation monitoring tool that alerts nurses to normal and abnormal physiological parameters. The ABCDE framework is used in conjunction with the Early Warning Score tool for assessing critically ill patient (Lees & Hughes, 2009).

In Mnazi Mmoja Hospital, nurses often keep seriously ill patients near to the nurses station for the purpose of close observation and monitoring of vital signs, unfortunately most of the patients deteriorate without nurses knowing the causes, as they recognize changing of patients based only on clinical features.

Several studies show that there is a knowledge gap on assessment of critically ill patients in the ward. Furthermore, there is limited published study of knowledge and practices of nurses on caring critically ill patients in Tanzania especially at Mnazi Mmoja Hospital in Zanzibar. Therefore, this study aims at assessing the nurses' knowledge, practice and challenges of caring critically ill patients in general ward. The study is expected to provide background information for in job training for nurses aiming at improving the care of critically ill patients in ward settings.

1.1.1 CONCEPTUAL FRAMEWORK

The researcher develops the conceptual framework after extensive review of literature (Garside, J. 2010 , Quirke, Coombs & McEldowney, 2011). The conceptual framework contains dependent and independent variables. The dependent variable is the care of critically ill patients while independent variables are knowledge, practice of nurses and challenges for nurses on the care of critically ill patients in the ward.

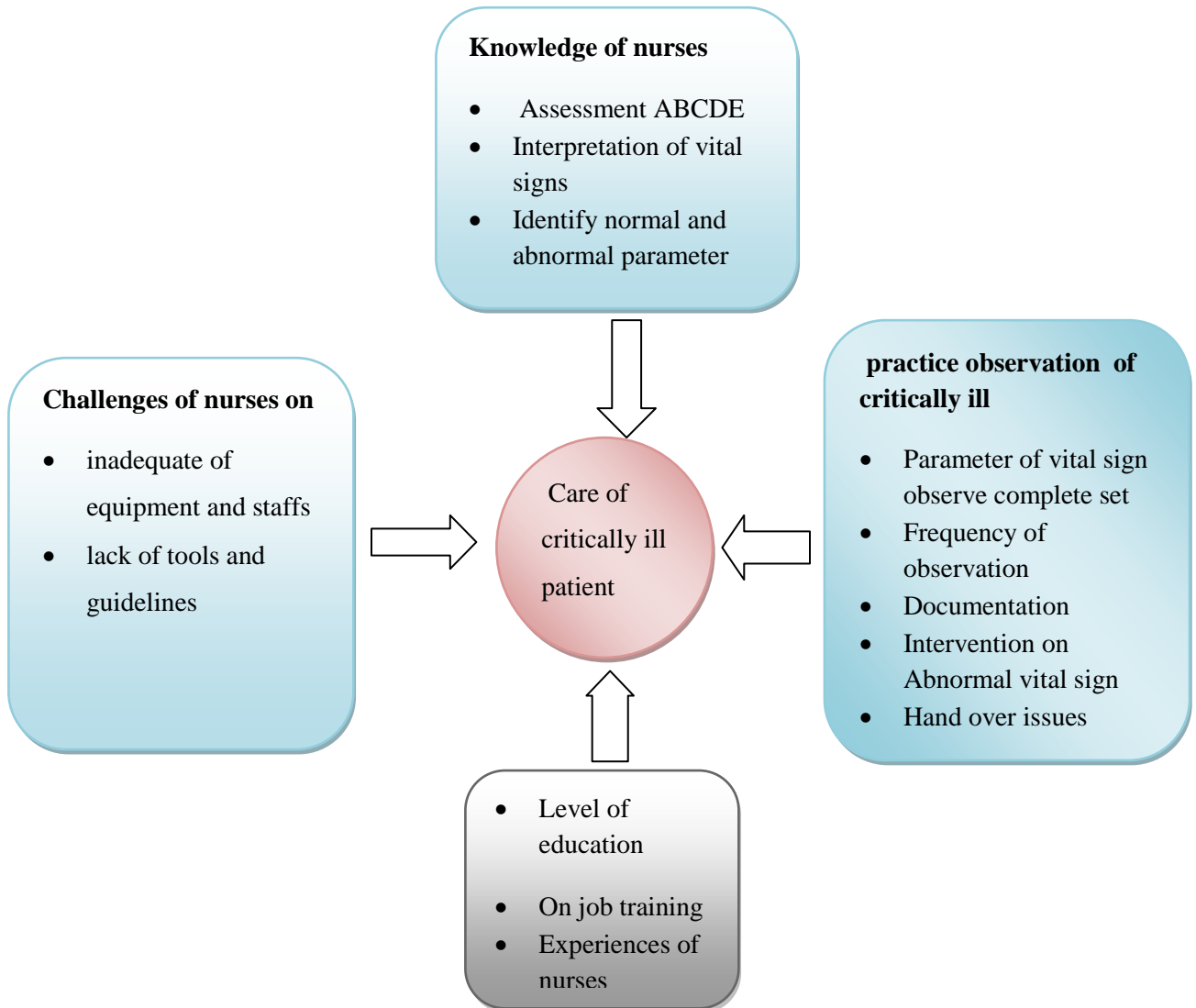
On knowledge the researcher was based more on theoretical and assessing the competence of nurses by using ABCDE and able to identify problem and how to intervene to save the life of the patient and give a timely quality care. Also, to evaluate if nurses have knowledge of interpreting vital signs in order to render appropriate and timely intervention.

Nurses should practice according to the standard and follow sequential ABCDE, they should understand how to intervene in an actual situation. Nurses should well follow the frequency observation of vital signs because recent review recommends that every patient have a documented plan for vital sign monitoring. Nurses are supposed to follow intake and output of patient, calculate within 24hrs fluid balance, document and hand over report of critically ill in a systematic way.

Lastly the researcher was looking at challenges following nurses while caring for critically ill patient in wards.

Conceptual Framework

Figure 1



Source: develop from (Garside, J. 2010 , Quirke, Coombs & McEldowney, 2011)

Key components of Conceptual Framework

Exposure/Independent Variables:

The exposure of interest included the demographic characteristic (age, sex, level of education, and ward/unit of work), training characteristics (such as years of experience, in-service training), knowledge of nurses' on assessment of critically ill patients like an assessment ABCDE, interpretation of vital signs and identification of normal and abnormal parameters. Also, other exposures were practice on observation of critically ill such ABCD assessment, monitoring of vital signs, documentation, intervention on abnormal vital signs, communication between colleagues, hand over issues and challenges faced like inadequate of equipment and staffs, lack of tools and guidelines.

Dependable variable:-

Care of critically ill patient

1.2 SIGNIFICANT OF THE STUDY

The findings of this study will help to understand the level of knowledge and practice of nurses that will enable to predict the training needs for caring critically ill patients in the ward. Also help to update and review the current curriculum of nurses on caring critically ill patients in the ward.

Further more the findings identify challenges facing by nurses when provide care of critically ill patients which need to be address by the hospital management. additionally, study findings expect to provide evidence -based to improve quality care to the patient.

Finally, the findings can help the Ministry of Health, Stakeholders and Hospital management to review tools and guidelines that will be used in hospital on providing quality care to critically ill patient in the general ward.

1.3 RESEARCH QUESTIONS

1. What is the proportion of nurses with knowledge on the initial assessment of critically ill patient in the wards at Mnazi Mmoja Hospital?
2. What is the nurse's practice on observation of critically ill patients in the ward at Mnazi Mmoja Hospital?
3. What are the challenges of nurses on caring of critically ill patients in the ward at Mnazi Mmoja Hospital?

1.4 STUDY OBJECTIVES

1.4.0 Broad objective

Assessment of nurses knowledge, practice and challenges on the care of critically ill patients in the ward at Mnazi Mmoja Hospital, Zanzibar.

1.4.1 Specific Objectives

1. To determine the proportion of nurses' knowledge on the initial assessment of critically ill patients in ward settings at Mnazi Mmoja, Hospital Zanzibar.
2. To determine nurses practice on observation of critically ill patients in ward settings at Mnazi Mmoja Hospital, Zanzibar.
3. To identify challenges of nurses on care critically ill patients in ward settings at Mnazi Mmoja Hospital Zanzibar.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Nurses knowledge of assessment of critically ill patients

Nurses knowledge play an important role in assessing and identifying critically ill patients. Ongoing specific clinical education and skills training enables nurses to recognize and respond to critically ill patients. The level of education is considered as an important predictor in ward nurses' ability to quickly recognize patient deterioration (Massey, Chaboyer, & Anderson, 2017).

A study done in Greece on the factors influencing the nurses' decisions to activate the medical emergency team showed that nurses who had studied at master's level were more confident in assessing and recognizing patient deterioration. Besides, nurses who had graduated from a 4-year university educational programme identified patient deterioration significantly quicker than nurses who had graduated from a 2-year educational Programme (Pantazopoulos et al., 2012).

Another study undertaken in England on the knowledge aspect of acute care in trainee doctors (Pre-registration house officer (PRHO)) and senior house officers (SHO)) demonstrated that: there is a knowledge gap or lack of knowledge and understanding about the initial assessment and treatment of acutely ill patients in the ward (Smith & Poplett, 2002).

Yet another study conducted in the United Kingdom on the early management of acutely ill ward patients identified that undergraduate and junior physicians have lack of knowledge, confidence, and competence in all aspects of acute care including basic task of assessment, recognition and management of acutely ill patients. Also, the researcher concluded that inadequate training in acute care skills remains as a major problem (Frost & Wise, 2012).

In addition, a study done in Australia in a simulated setting to assess and manage deteriorating patients by registered nurses, the nurses were evaluated against their knowledge, situational awareness and skill performance, the nurses score average of

67% on knowledge of deterioration management, and low scores (50%) on situation awareness and skill performance with a lot of important observation and actions found to be missing. The study indicated that there is a low knowledge and skills of nurses working in rural area with notable performance decrements as patients acutely declined (Copper et al., 2011).

A study conducted in Australia, on critical care: monitoring of eight vital signs reported that nurses relied on traditional vital signs to assess patients, but hospitalized patients nowadays are sicker than in the past. Traditional vital signs may not be adequate to identify those who are critically ill, but require adding other parameters which are urine output, pain and level of consciousness, when the nurses performing an assessment of patients. Knowledge, skills and the ability to think critically is required not only to measure vital signs accurately, but also to interpret it in the context of the patient's illness and medical treatment (Elliott & Coventry, 2012).

Another study conducted in Muhimbili National Hospital on nurses' practices and knowledge on assessment and observations of adult critically ill patients in the ward indicated that about 81% of nurses fail to recognize signs of hypovolemic shock, while 67% fail to recognize signs of poor circulation and 50% unable to conduct quick assessment of Airway, Breathing, and Circulation, in sequential order. The study concluded that nurses working in general wards who care for critically ill patients have sub-optimal practice and minimal knowledge of the patient assessment and observation (Mkoka, 2009).

2.2 Nurses practice on observation of critically ill patients

Vital role of critical care nurses is to offer continuous observation of critically ill patients. Observation will reduce a patient's risk of abrupt deterioration. Observation involves assimilation, monitored physiological parameters, interpretation, and physical and psychological response to interventions. The appropriately trained and experienced nurses can provide this complete level of observation (Galley & O'Riordan, 2003).

Monitoring is a fundamental practice part on care of the critically ill patient, physiological response to critical illness is linked strongly to outcome. The aim of

monitoring is to assist in prevention or treatment of organ function and cellular injury (Andrews & Nolan, 2006). Nurses use different observation tool to monitor critically ill patient in general ward, one among the used tool is an early warning score tool in which the tool improve recognition of response to deteriorating patient, improves frequency monitoring of vital signs in the general ward. (Gardner-Thorpe et al., 2006).

In 1997 Morgan, Williams and Wright in the UK were the first to develop and publish the Early Warning Sign tool (EWS). The tool consists of six parameters: respiratory rate, oxygen saturation, temperature, systolic blood pressure, pulse rate and level of consciousness. Each parameter had a range of 1 to 3 scores (Kyriacos et al., 2014).

The score is divided as low score: 1 -4; medium score: 5-6; and high score: score of 7 or more. The higher patient score, the higher deterioration of patient. In addition, score of 2 should be added for any patient requiring supplemental of oxygen. The frequency of monitoring vital signs is depend on patient score, if score 0 monitoring of vital signs is after every 12hrs, score 1-4 after every 4 to 6hrs, if patient score 5-6 or 3 one parameter monitor the patient after every 1hr, if patient score 7 or more need continuously monitoring. And register nurse consults different team with specialist, according to protocol. (Williams et al., 2012).

The study done in Singapore on nurses experience with deteriorating ward patients: found that observation of the vital signs was not completely performed and interpreted by the enrolled nurses. Also, assessment of the respiratory rate was reported to be frequently omitted from routine vital signs and lack of awareness of changes in respiratory rate as an important parameter in detecting deterioration of patients. The study noted that enrolled nurses perceived that saturation of oxygen monitoring as more reliable assessment in reflecting early signs of respiratory dysfunction, rather than counting abnormal respiratory rate (Chuwa, Mackey & Liaw, 2013). Another literature illustrated that accurately measuring respiratory rate is a fundamental part of patient assessment and an important baseline observation. Nurses are expected to be competent in the accurate measurement and interpretation of respiratory rate, but monitoring of this vital sign is poor (Jevon, 2010).

Another study conducted in the United Kingdom on comparing the monitoring of patients transferred from a critical care unit to hospital wards found that lower nurse to patient ratio in the ward link in failure to observe vital signs, interpret, and prevent avoidable complication from underlying illness or medical care, which leads death to the patient. This is caused by failure to notify physician, obtain physician response to initiate immediate action and inadequate level of surveillance (both recording and interpreting the clinical observations). If nurses fail to record findings and communicated to the appropriate staff, intervention can be delayed (Wood, Coster, & Norman 2014).

Another review of literature on monitoring of vital signs using early warning score system: found that infrequent monitoring, incomplete recording and misinterpretation of vital signs lead to delay in reporting and hence mislead in given appropriate interventions among nurses working in the ward. In addition, it is reported that patient survival depends on nurse's decisions to call for assistance promptly if abnormal vital signs noted. Usually, ward nurses delay to report after documenting about patients' vital signs which resulted in treatment delays of patient intervention (Kyriacos, Jelsma, & Jordan 2011).

The study done in New Zealand on physical observation and nursing intervention in pre-arrest patient: the result showed that there are an infrequency observation and incomplete set of vital sign, poor documentation, absence of intervention on abnormal neurological, insufficient of oxygen delivery to meet patient requirement and poor awareness of medical staff on the abnormal physiology of patients. Also, noted that there were few interventions to treat abnormal physiology, in which 32% of patients with abnormal physiology without intervention did not survive (Ryton-malden, 2011).

The study conducted in Australia on nurses documentation of physiological observation in three acute care setting. It was observed that the most frequently documented physiological parameters across all clinical areas are respiratory rates, saturation of oxygen, heart rates and systolic blood pressure while temperature and Glasgow coma scale (GCS) were least recorded (Considine, Trotter, & Currey, 2016).

The study on nursing assessment of continuous vital signs surveillance to improve patient safety on medical and surgical unit at USA showed that continuous, multi parameter patient monitoring performed on medical and surgical units with a small and an appropriate level of caution. Continuous vital signs assessment may initiate nursing intervention that will prevent failure to rescue events. Majority of nurses surveyed agreed that continuous vital signs surveillance will help to enhance patient safety (Watkins, Whisman, & Booker, 2016).

Tanzania identified that abnormal vital signs are associated with mortality; In Muhimbili National Hospital introduced vital sign directed therapy protocol, whereby the patients admitted in ICU were monitored vital signs by following directed therapy protocol. When nurses identify danger sign they treat patient according to protocol, and monitor the patient after every 30 minutes. The patients who were in danger signs have respiration rate of < 8 or > 30 b/min, O₂ saturation of < 90 , HR of < 40 > 130 , Systolic blood pressure of < 90 mmHg, and abnormal airway sound. The study concluded that the introduction of vital signs directed therapy protocol improved the acute treatment of abnormal vital signs and mortality rates were reduced for patients with hypotension at admission but not for all patients (Baker et al., 2015).

2.3 Challenges of nurses on caring critical ill patient

Nurses encounter various challenges or barriers on compliance and accuracy of vital signs measurement. Some of the most common issues were related to insufficient time, resources, distractions from multi-tasking and individual judgments about the importance of vital signs. Other researchers have also cited poor decision-making skills, equipment management issues, and poor nurse activity organization (Tysinger, 2014).

The study conducted in Iran on caring for acutely ill patients in general wards illustrated that there were several challenges that hinder proper assessment and observation of critically ill patients. Among challenges mentioned were increased workload of ward staff, shortage of equipment, used individual judgment rather than using protocol and guideline, which consequently leads to all patients receiving low-quality care. Others were knowledge and work experience among some nursing staff (Nazila, 2016).

The study on vital signs measurement as an indicator of safe care delivered to elderly patients found that the barriers that interfere in the proper monitoring of vital signs were workload, lack of availability and accessibility of basic equipments such as thermometers, stethoscopes and sphygmomanometers, which compromises the nursing assessment and leads to a greater susceptibility to incidents. Although the facility does not provide conditions to measure vital signs properly, the nursing staff attempts to do what is feasible given their current knowledge and context to achieve the best outcome possible in view of the resources available (Teixeira et al., 2015).

Another study done in London showed that there were number of barriers facilitate to monitoring and escalation of abnormal vital signs, whereby equipment issues both electronic and manual devices and workload of nurses were inevitable barriers for effective assessment and monitoring of patients in the general ward (Smith & Aitken, 2015). In addition, the case study done in Uganda on nursing documentation dilemma; mentioned that the credibility of the hospital in caring critically ill patients can be gauged from the quality of the nurse's documentation as they stay with the patients most of the time. The study revealed that lack of time for proper documentation is due to a big number of patients to take care of, work overload, lack of stationary and basic monitoring equipment, nursing documentation forms and knowledge skills on Documentation (Nakate et al., 2015).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

A cross sectional descriptive study design was used in order to give a detailed description of the nurse's knowledge, practice and challenges in the care of critically ill patients. In a cross sectional study, data were collected at one point in time, the phenomena under the study was captured during one period of data collection (Polit and Beck, 2008). A quantitative approach was used to collect and analyze data from the study participants; data was quantified in numerical values, percentages to enable statistical inferences. A quantitative method was chosen because it enables the researcher to test the relationship and examine cause and effect among dependent and independent variables.

3.2 Study Setting

The study was conducted at Mnazi Mmoja Hospital- Zanzibar in different adult wards (Medical, Surgical, Neurosurgical, Obstetric and Gynecology wards, and Emergency department). The hospital is located in Stone Town, the historic center of Zanzibar City. It serves outpatient services/clinics, specialized clinics, as well as several wards for inpatient services. The hospital attends over 600 outpatients and 71 admissions on daily bases. Mnazi Mmoja Hospital has about 1080 workers among them, 354 are nurses, of which 8 with Masters degree level, 35 with Bachelor of Science in nursing and 311 with a diploma in general nursing and midwifery (MMH, 2016). Reason for selection of the site was that, Mnazi Mmoja Hospital is a referral hospital, which provides care for critically ill patients in different wards. The hospital has only two ICU, which is inadequate to serve all hospitalized critically ill patients whereby other patients, which are needed ICU services remain in general wards. The hospital receives patients from an urban area as well as from all regions of Zanzibar. Currently Hospital has bed capacity of 776 due to the expansion of three new building. It is the teaching hospital whereby

nursing students, medical students, foreign students as well as interns come for learning and practical purposes.

3.3 Study Population

The target population of this study was all registered nurses working in different wards at Mnazi Mmoja hospital who provide direct care to adult critical ill patients.

3.4 Sample size

A study done in Australia on evaluating knowledge and skill of nurses on assess and manage deteriorating patient indicates that 88.6% of nurses have the knowledge on assess capillary refill on circulation (copper at al., 2011)

The sample size of this study was determined by using the Kish Leslie formula as follows:-

$$n = \frac{Z^2 p(100-P)}{\epsilon^2}$$

Where;

n = Minimum required sample size

z = Standard normal distribution 1.96 corresponding to 95% confidence level

p = Expected proportion with characteristic of interest (88.6%)

ϵ = Maximum margin of error (5%)

$$n = 1.96 \times 1.96 \times 88.6 (100 - 88.6) / 25$$

n= 155 participants.

Adjusting for non response, $n' = n \times (100\% / 100\% - f \%)$

Adding 10%, of non response rate (n), $155 \times 100 / 100 - 10\% = 15500 / 90 = 172$ Therefore, the adjusted sample size was 172 participants (Nurses).

3.5 Sampling Procedure

Convenience sampling method was used to recruit the participants. The researcher approached each of the nurses who were available during the time of data collection. All

nurses in the selected wards who were eligible to participate in the study were explained about the purpose of the study, and were requested for their consent for their participation. A nurse who was willing to participate in the study was sign a consent form to fill the questionnaire and also were included in the observation part of the study.

3.6 Inclusion Criteria

All registered nurses working in Surgical, Medical, Neurological, Emergency and Obstetric and Gynae wards who had an experience of at least three months and above and registered nurses who were officially employed at Mnazi Mmoja Hospital.

3.7 Exclusion Criteria

Registered nurses who were not directly involved in bedside patient care (nurse manager, clinical instructor, and nurses with no clinical roles), not at work place during data collection period like on annual leave, on maternity leave, sick leave and who participated in the pre-test were excluded.

3.8 Study Variables/Measures

Independent Variables:

1. Socio - Demographic (age, sex, level of education, place of work (ward), year of experience, in –service training).
2. Knowledge of nurses on (vital sign and its interpretation, assessment of ABCDE, identification of normal and abnormal parameters).
3. Practice (observation of all parameters, frequency of observation, documentation, intervention on abnormal vital sign, communication between colleagues, hand over issues).
4. Challenges faces during caring of critically ill patient.

Dependable variable:-

Care of critically ill patient

3.9 Data Collection Instruments

The researcher used two tools to collect data, questionnaire and checklist. Questionnaire (see appendix A1&A2) and checklist (appendix B1&B2) in order to answer the objectives of the study. A self-administered structured questionnaire was given to nurses in the ward. Nurses filled the questionnaire themselves after given clear instructions from the researcher. The questionnaires included both close and open-ended questions. The questionnaires were in English and Swahili version. English version because it is the official communication language in health professional as well as all nurses in Tanzania are trained using English language and for Swahili version is for the purpose of comfortability of participants. The questionnaire was developed after a wide literature review and consultation of specialists in critical care and trauma. The questionnaires were administered in all three working shifts of a day. The estimated time of filling the questionnaires was about 30 – 40 minutes. The principal investigator and research assistants were all available on all shifts to seek consent, give questionnaires to participants, assisting participants for clarification and observe nurses practice on care of critically ill patients. The questionnaire comprised three sections in order to assess the following variables:-

Section A: Socio-demographic information

The aim of this section was to determine nurse's characteristics, which might influence their knowledge and practice on assessment and care of critical ill patients. Questions regarding age, gender, level of education, years of work experience, and in-service training were asked.

Section B: Knowledge of nurses on the initial assessment of critically ill patient

In line with the knowledge variable, the researcher formulated the relevant questions that were related to nurses' knowledge, concerning on Assessment of ABCDE, an understanding of normal and abnormal vital signs and its interpretation.

Section C: Challenges on care of critically ill patient

The open-ended questions were formulated and coded during analysis to examine the barriers, which hinder nurses to perform proper care, and assessment of critical ill patients.

Checklist for nurse's practice

This method assisted in getting more information, which is not possible to capture by using the questionnaire. This helped to improve the quality of the data collected. In this regard, the researcher observed how nurses give care to patients directly during their nurses activities. The researcher developed a checklist by using a literature and clinical experience and checklist consisted of four columns. The first column was for serial number of activities, second column was for skilled observed by researcher, third column for performance of nurses which contain two parts Yes and No. If nurses perform correctly was ticked yes and if not done was ticked no and the last column for remarks. Observation was participatory and each participant was observed once and within one hour to two hours (60 minutes to 120 minutes). The researcher was around within the ward, the participant was conveniently selected. The participants were aware that they were being observed.

3. 10 Validity

Validity is the degree to which instrument measures what is intended to measure, (Polit & Beck, 2004). In this study content validity was achieved by having the questionnaire reviewed by the professional nurses in the field of critical care and trauma and research experts to assess relevance of tool items and study objectives. To ensure face validity the researcher discussed together with professional nurse specialists if the questionnaires are clearly worded, well explained and if it addresses what it is meant to address.

3.11 Reliability

Reliability is the consistence or constancy of a measuring instrument (Polit & Beck, 2004). To ensure reliability of instrument, the questionnaire was pre-tested among nurses who were not included in the study, pre-tested was done to 17 nurses at Mnazi Mmoja Hospital (MMH) Zanzibar, it is a 10% of the sample size to check the clarity of

questions and to give clues on how much time was spent to complete questionnaire. Responses from the pre-testing were discussed with the research supervisor. The data collected during the pre-test was not included in the study. Researcher calculated Cronbach's Coefficient during pre test by using software.

3.12 Research Team

Two research assistants were involved during data collection in order to help the researcher to collect data correctly, training was conducted for research assistants to give short information on the nature and the purpose of the study and explanations on how effectively fills the data collection tool according to the research objectives.

3.13 Data Analysis

The principal investigator with the aid of a Statistician construct template, collected data were coded, entered, cleaned and analyzed using the statistical package of social science (SPSS) version 20. Knowledge of the participants was measured by marking the participants' responses. Participants who scored correct from a certain question were considered to have knowledge of that item while participants who score wrong from a certain question were considered to have no knowledge on that question. The total score was computed to obtain total marks 100%. Level of knowledge was measured using grading scale adopted from MUHAS grading scale. Researcher modified grading scale of competent nurses into 3 categories that is participants who scored 70% and above regarded as having high knowledge, while those scored 50% to 69% regarded as having moderate knowledge and those scored <50% will be regarded as having poor knowledge. Practice as well was ranked in three levels, all score 70% and above was considered to have a good practice, score 50- 69% fair practice, and less than 50% poor practice. Challenges were asked in open ended question, information obtain from open ended question was sorted for similar answers, categorized and coded for analysis.

The findings of knowledge and practice were presented in tables, pie charts, bar chart and histograms. All numerical data was expressed in number (n) or percentage (%).

3.14 Ethical Considerations

The approval of conducting the research was sought and granted from Muhimbili University of Health and Allied Sciences (MUHAS) Research Ethical Committee (Appendix D1), Permission to conduct the study was requested from the Ministry of Health Zanzibar and Mnazi Mmoja Hospital, Zanzibar (Appendix E1 &E2). Participants were required to sign the informed consent form first (Appendix C1&C2), and then allowed to fill the questionnaires. No names of participants were written during data collection only code number was used for assurance of their anonymity and confidentiality. The participation in the study was voluntary and the researcher assured the participants that they can withdraw from the study at any time. The participants were allowed to ask questions in case of misunderstanding and clarification was made accordingly. The filled questionnaires were kept under locked cupboard and only accessible by the researcher and the data was entered into the computer through a password and stored properly with only the researcher being known the password.

3.15 Dissemination of the study findings

A research report will be presented to the School of Nursing and director of Postgraduate Studies at MUHAS as partial fulfillment of the requirements for the award of Master's degree in Nursing. Also the report will be presented to Mnazi Mmoja Hospital Zanzibar. Efforts will be made to publish the results in a peer reviewed scientific journal and make presentations at seminars, workshops and scientific conferences. Hard and soft copies will be availed to MUHAS library, MMH, and finally the Ministry of Health Zanzibar

CHAPTER FOUR

4.0 RESULTS

This chapter presents the results on nurses' knowledge, practice and challenges on care of critically ill adult patients at Mnazi Mmoja Hospital - Zanzibar. A total of 172 nurses were recruited into the study and included in the final analysis. This chapter is divided into sub-sections on socio-demographic characteristics, nurses' knowledge on care of critically ill patients, nurses' practices on care of critically ill patients and nurses' perceived challenges on caring critically ill patients in the wards.

4.1 Participants demographic characteristics

The study comprised of 38 men (22.1%) and 134 women (77.9%) with the male to female ratio of 1:3.5. The mean age was 29.69 and the majority was in the age range between 20 and 29 yrs (52.3%), while the age ranged from 20 to 50 years. The majority of participants had diploma level of education (83.1%), followed by degree level (16.3%) and only 0.6% had master degree level of education. About fifty eight percent (58.7%) of participants had 1 to 5 years of working experience and the least (9.9%) had less than 1 year. In addition, based on over distribution of participants in the wards, surgical wards had 65 participants, medical wards 37, Obstetric & Gynecological wards 33, Emergence department 20 and those from Neurology ward were 17. Among 172 participants only 64 (37.2%) had on job training on care of critically ill patients. Table 1 below indicates participants' demographic characteristics.

Table 1: Socio-demographic characteristics of nurses (N=172)

Variable	Frequency (N)	Percentage (%)
Sex		
Male	38	(22.1)
Female	134	(77.9)
Age (Years)		
20 - 29 yrs	90	(52.3)
30 - 39 yrs	66	(38.4)
40 - 49 yrs	15	(8.7)
50 and above	1	(0.6)
Mean Age \pm SD (years)	29.69 \pm 6.44	
Education		
Diploma	143	(83.1)
Degree	28	(16.3)
Master Degree	1	(0.6)
Working experience		
Less than 1 year	17	(9.9)
1 – 5 years	101	(58.7)
6 – 10 years	30	(17.4)
More than 10 year	24	(14.0)
Ward/Unit		
Surgical wards	65	(37.8)
Medical Wards	37	(21.5)
Obstetrics & Gynae ward	33	(19.2)
Emergency	20	(11.6)
Neurology ward	17	(9.9)
On job training		
Yes	64	37.2
No	108	62.8
Total	172	100%

4.2: Nurse's knowledge on caring critically ill patients

Several questions were asked in order to know the knowledge of the participants on assessment of critically ill as part of care while in the ward.

The participants were asked on initial approach of assessing critically ill patients and about 157 (91.3%) participants were knowledgeable on the correct sequence when conducting an initial assessment which is Airway, Breathing, Circulation and Levels of Consciousness. The remaining 15 participants (8.7%) were not knowledgeable on the correct sequence of conducting initial assessment to critically ill patient admitted in the ward.

Regarding knowledge on a first parameter to assess when patient's condition is deteriorating, 51.2% of participants reported knowing that airway is the first parameter among the three parameters which are airway, breathing and circulation. However, only 29 (16.9%) were knowledgeable on how to confirm if patient has patent airway.

On knowledge of the assessment of circulation, only 44.2 % of participants were knowledgeable that circulation can also be assessed by checking pulse rate (volume, rhythm, rate). Furthermore, only 29.1% knew at least three parameters used to assess peripheral perfusion among the five which are capillary refill, pulse, temperature, skin color and SPO2 as shown in Table 2 below.

Table 2: Participants knowledge on initial basic assessment of critically ill patients

Variable (Knowledge on)	Knowledgeable	Not knowledgeable
Initial approach of critically ill patients (ABCD)	157 (91.3%)	15 (8.7%)
Airway as first parameter to assess on deteriorating patient	88 (51.2%)	84 (48.8%)
Confirming patent airway	29 (16.9%)	143 (83.1%)
Pulse and rhythm as parameter to assess circulation	76 (44.2%)	96(55.8%)
Three (3) parameters for peripheral perfusion	50 (29.1%)	122 (70.9%)

Regarding knowledge for the normal adult range of physiological parameters of vital signs; among 172 responders, 88 (51.2%) were knowledgeable on all normal physiological parameter. However, one responder 1(0.6) was not knowledgeable on any of normal physiological parameters of vital signs.

With regard to the normal range, 97.7 % were knowledgeable on the normal range of temperature, 81.4 % were knowledgeable on normal range of respiration rate, 75.6 % were knowledgeable on normal range of heart rate while 70.9 % were knowledgeable on normal range of systolic blood pressure range. However, only 51.2 % of participants were knowledgeable on normal Oxygen saturation level as shown on Table 3 below.

Table 3: Participant knowledge on normal range of physiological parameters of adult vital signs

Variable (Normal range)	Knowledgeable	Not knowledgeable
Temperature	168 (97.7%)	4 (2.4%)
Respiration rate	140 (81.4%)	32 (18.7%)
Heart rate	130 (75.6%)	42 (24.4%)
Systolic blood pressure	122 (70.9%)	50 (29.1%)
Oxygen saturation level	88 (51.2%)	84 (48.8%)

Participants were also assessed on their knowledge on recognition of high risk patients, through abnormal physiological parameter, interpretation of Glasgow coma scale (GSC), normal urine output and Oxygen saturation in ambubag as shown in table 4 below. About 45.9% of participants were knowledgeable that respiration rate of 25 – 35 breath/min indicates patient who is deteriorating (high-risk patients) while 50.6% were knowledgeable that a pulse rate of 120b/min indicate a high risk patient and 3.5% were knowledgeable that a temperature of 37.5 – 38°C indicate a deteriorating patient. In addition, majority of participants (76.7%) interpreted that patients with GCS of 3 is an unconscious. However, majority of participants (56.4%) did not know the normal urine output and 66.3% did not know the maximum range of O₂ concentration in ambubag, which is 90 – 100%.

Table 4: Participants knowledge on recognition of high risk patients, interpretation of GCS, normal urine output and maximum oxygen saturation in ambubag (N = 172)

Variable	Knowledgable	Not knowledgable
Identify high risk parameters of patient	79 (45.9%)	93 (54.1%)
Determine status of patients with 3 GCS	132 (76.7%)	40 (23.3%)
Normal urine output	75(43.6)	97 (56.4%)
Maximum range of O2 concentration (%) in bag valve mask (ambubag)	58(33.7)	114 (66.3%)

Furthermore, the participants were asked about their knowledge for the initial management of critically ill patients with shock, bradycardia and bradypnea. With regard to patient with shock, about 79.1% of participants indicated keep IV open and run a normal saline as initial management, 18.6% indicated the administration of Oxygen via nasal cannula as initial management, 1.7% and 0.6% indicated giving of paracetamol and wait the doctor to review the patient respectively as initial management a nurse can do while caring critically ill patient in the ward. With regard to the initial management of patient with bradycardia, 70.9% of participants indicated that administration of oxygen with non-re-breather mask and giving of atropine as initial management. But for the patient with bradypnea, the majority of participants 60 (34.9%) indicate that giving oxygen with venture mask, oxygen with nasal cannula (30.8%) and administration of bronchodilators (3.5%) while only 30.8% of participants indicated that ventilating patient with bag valve mask (Ambu bag) as initial managed. See table 5 below

Table 5: Participant knowledge on initial management of critically ill patient

Variables	Frequency (%)
Initial management of shock patient	
Keep IV open and run a normal saline	136 (79.1%)
Administration of Oxygen via nasal cannula	32 (18.6%)
Give tabs. Paracetamol	3 (1.7)
Wait the Dr to review the patient	1 (0.6%)
Initial management of bradycardia patient	
Administration of Oxygen with non re-breather mask and starting atropine	122 (70.9%)
Only monitoring and observation of patient after every one half an hour	27 (15.7%)
Report to nurse in-charge	20 (11.6%)
Wait the Dr to correct it	3 (1.7%)
Initial management of bradypnea patient	
Ventilation with Bag valve Mask (Ambu bag)	53 (30.8%)
Give Oxgen with venture mask	60 (34.9%)
Give Oxygen nasal canula	53 (30.8%)
Administration of broncho dilators	6 (3.5%)

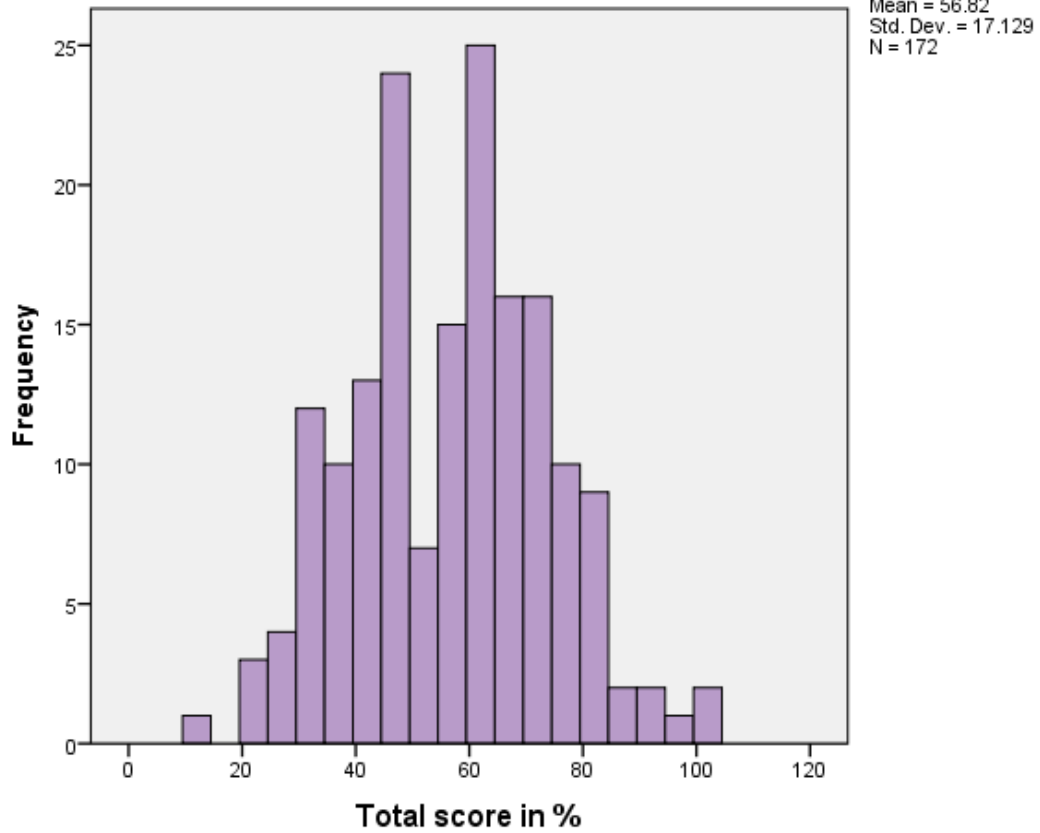
Apart from scoring a certain question with either knowledgeable or not, the participants were graded based on their total score of knowledge part of the questioner using a grading scale as high, moderate or poor knowledge.

From table 6, the 39.0% of participants had low (poor) level of knowledge on care critically ill patients, followed by those with moderate knowledge (36.6%) while only (24.4%) had high knowledge on care of critically ill patients and Figure1 shows the distribution of general knowledge of participants with mean \pm SD of 56.83 \pm 17.13.

Table 6: Proportion of knowledge levels of participants related to care of critically ill patients

Level of knowledge	Frequency	Percentage (%)
Low Knowledge	67	39.0
Moderate Knowledge	63	36.6
High Knowledge	42	24.4
Total	172	100

Figure 1 : Show distribution of general knowledge score of nurses on care of critically ill patients



4.3 Nurses practice on caring critically ill patients in ward settings

The participants were asked if they assess critically ill patients and if they have tools/guidelines used for the assessment.

Figure 2 showed the proportion of participants who indicated that they assess the critically ill patients. About 93.02% of participants indicated to assess the critically ill patients in the wards, however, only 31.98% indicated that they have used guidelines or tools to assess critically ill patients (figure 3).

Figure 2: PROPORTION OF NURSES WHO ASSESS THE CRITICALLY ILL PATIENTS

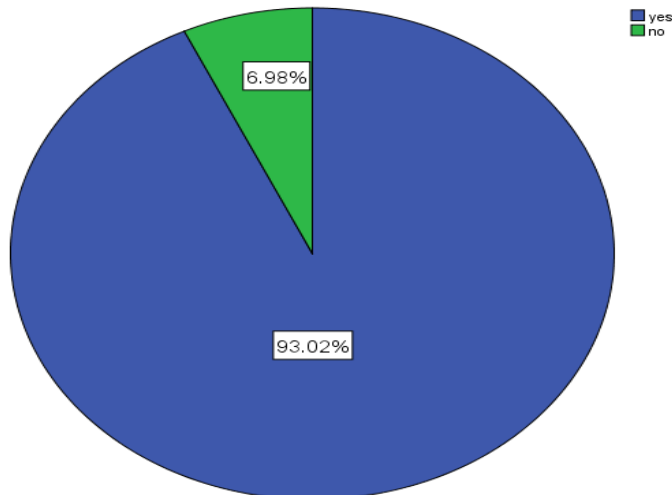
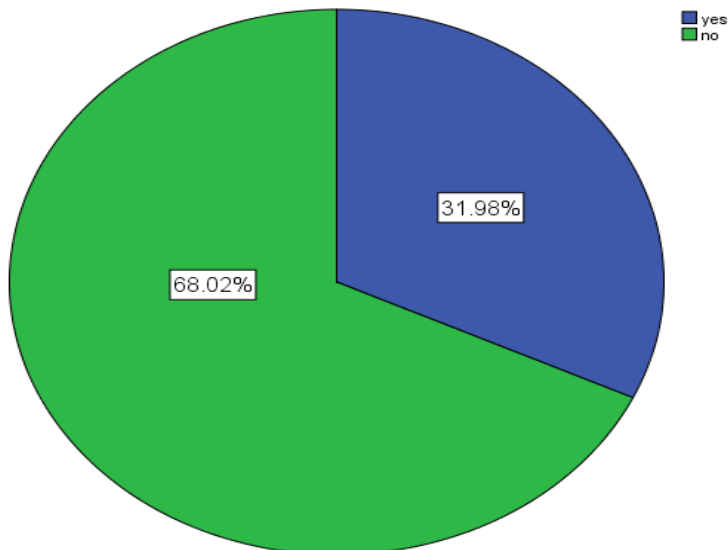
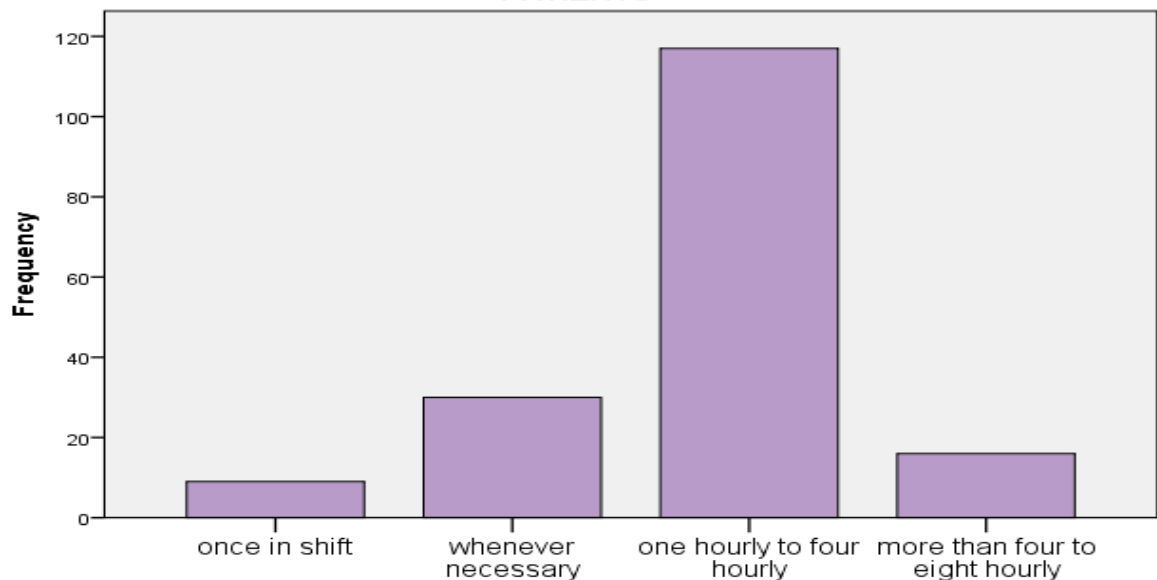


Figure 3: PROPORTION OF NURSES WHO USED GUIDELINES/TOOLS WHEN ASSESSING CRITICALLY ILL PATIENTS



Also, participants were asked on frequency of checking vital signs to critically ill patient in the ward and responses were as follows; 117(68%) nurses reported that vital signs is checked one to four hourly, while 30 (17.4%) reported checking vital signs when necessary, 16 (9.3%) reported checking vital signs more than four to eight hours, and 9 (5.2%) reported to check once in a shift as shown in above figure.

FIGURE 4: FREQUENCY OF CHECKING VITAL SIGNS TO CRITICALLY ILL PATIENTS



In addition, the participants were asked if they practice CPR to the patients without pulse, only 35.5% of participants stated to practice CPR while majority (64.5%) would not practice CPR.

Apart from using questionnaire to assess practice, participants were also observed how they give care to patients directly during their nursing activities by using the checklist on initial assessment approaches to critically ill patients, intervention done post problem identification and altered parameters of vital signs, observation of vital signs, reassessment post intervention, monitoring plan, documentation and hand over issues. The observation was done once to each participant and took about 60 minutes to 120 minutes. The participants were aware that they were being observed. Hence, one hundred and seventy two (172) nurses were observed during care of critically ill patients.

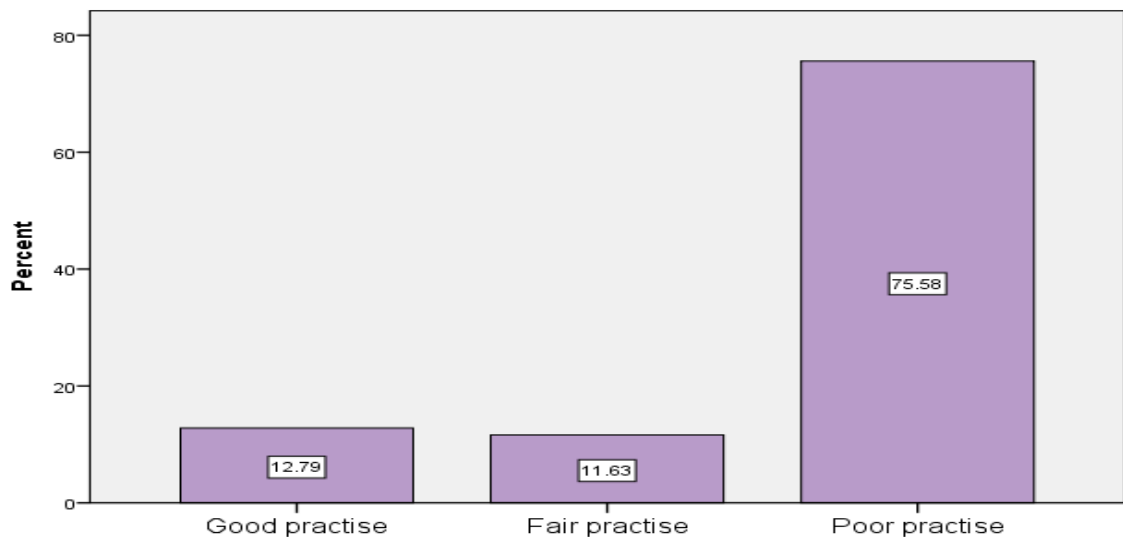
Of all participants during observation, only 40.7% used ABCDE approach on initial assessment of critically ill patients, 38.4% intervened post problem identification. Most of the participants (84.9%) measured vital signs, though only 25% measured all parameters of vital signs and the parameters not measured most were AVPU & SPO₂, and 63.4% of participants did correct intervention for altered parameters. On reassessment post intervention, 35.5% reassessed the patients while 64.5% did not reassess the patients post intervention. Majority of participants 73.8% did not monitor vital signs on regular bases, 67.4 did not document and 64.5% of participants gave reports during handover (shift to shift report) or during the routine nurses activities, though the report was not systematic as shown in Table 7.

Table 7: Distribution of participants practice through observation (N = 172)

Variable	Frequency	Percentage (%)
Use of ABCDE approach during assessment		
Yes	70	40.7
No	102	59.3
Intervention post problem identification		
Yes	66	38.4
No	106	106
Measure vital signs		
Yes	146	84.9
No	26	15.1
Set of parameters observed (Temperature, Pulse rate, Respiration rate, Blood Pressure, O2 saturation and, AVPU)		
All parameters observed	43	25.0
Not all parameters observed	106	59.9
Not done	26	15.1
Correct intervention done if altered parameters		
Yes	109	63.4
No	63	36.6
Reassessment after intervention		
Yes	61	35.5
No	111	64.5
Monitoring is done on regular bases (monitoring plan)		
Yes	45	26.2
No	127	73.8
Report findings		
Yes	67	39.0
No	105	61.0
Documentation		
Yes	56	32.6
No	116	67.4
Delivery Report (give systematic report on hand over issues or during routine nurses activity.		
Yes	111	64.5
No	61	35.5
Total	172	100%

Generally, the total score of participants practice were also calculated whereby 130 (75.6%) had poor practice on care of critically ill patients, minority had fair practice 20 (11.6%) and 22 (12.8%) had good practice on care of critically ill patients through the above checklist as shown in Figure 5.

Figure 5: Show general practice of nurses on care of critically ill patients



4.4. Challenges Nurses' face during care of critically ill patients

In this study, nurses were asked to state the barriers that hinder proper care provision of critically ill patients. Different challenges were mentioned as shown in table 8 below. The majority of nurses (91.3%) indicated that inadequate equipment and materials were among the challenges they faced during caring for critically ill patients followed by a shortage of staff (72.1%), lack or poor knowledge (37.2%). Nevertheless, minority of nurses reported that lack of medication (emergency drugs) (8.1%), poor monitoring of patients (9.3%), poor working environment (8.1%) and lack of training (10.5%) as the challenges they faced in descending order respectively.

Table 8: Challenges faced by nurses who care for critically ill patients

Challenges	Frequency (N=172)	Percentage (100%)
Inadequate Equipments/ materials	157	91.3%
Shortage of Staffs	124	72.1%
Lack/Poor knowledge and skills	64	37.2%
Poor cooperation between staffs, relative and as well as within department	60	34.9%
Lack of guidelines/tools	49	28.5%
Workload of nurses (poor nurse : patient ratio)	38	22.1%
Lack of training	18	10.5%
Poor monitoring of patients	16	9.3%
Poor working environment	16	9.3%
Lack of medication (drugs)	14	8.1%

CHAPTER FIVE

5.0 DISCUSSION

This chapter discusses the study finding on demographic characteristics, knowledge, practice, and challenges face among nurses who care critically ill patients in the ward at Mnazi Mmoja Hospital. This is followed by the conclusion of the study, limitations, implication and recommendation from the study.

5.1 Demographic characteristics

In this study, it was found that the majority of participants were female 134 (77.9%) with the male to female ratio 1:3.5. The majority of participants 58.7% had working experience from one to five years. This is similar to the study done in Singapore on “frontline nurses experiences with deteriorating ward patients” by Chua et al., 2013 which demonstrates that 75% were female and 25% male with the sex ratio of (1:4) and 46.7% had working experience from three to five years. Enrollment of a lot of females is probably due to the dominance of female to the nursing professionals worldwide.

The study population had a mean age of 29.69 years, with a range of 20 to 50 years with the majority of participants (52.3%) having age group 20 to 29 years. In addition, the majority of the nurses had attained diploma level (83.1%). This is probably due to the employment system in nursing before 30 years old and after finishing diploma.

In this study, among 172 participants only 37.2% had on job training. This result was consistent with the result of a study done by (Mkoka, 2009) which showed that 23% of participants attended in-service training while they were at work. This fact is due to similar setting and country.

5.2 Nurse’s knowledge related to the initial assessment of critically ill patients

From this study, the mean score of nurses knowledge about care of critically ill patients was 56.8% (SD =17.12). Concerning the grading of general knowledge of nurses, 39% of nurses had low knowledge while 36.6% has the moderate knowledge and 24.4% had high knowledge on assessment of critically ill patients. This indicates that nurses have

inadequate knowledge on care and assess critically ill patients in the ward. This is a very challenging situation, as Mnazi Mmoja Hospital is a referral hospital whereby many patients referred from different hospital, so it is important to have nurses with adequate knowledge in order to save life of patients and provide good care of critically ill patients. In this study majority of participants (91.3%) knew ABCD as the initial approach of assessing critically ill patients, same as the study of (Pantazopolus et al., 2011) which shows the majority of the surveyed nurses (68%) reported that they evaluate patients by using ABCD approach. However, in this study nurses failed to confirm patent airway of the patients, only (19.9%) knew how to confirm patent airway. This implies that, nurses who work in general ward caring critically ill patients need to know, not only assessment approach, but also how to detect compromised airway to prevent unavioded deaths from compromised airways. Allen,(2004) confirmed that an obstructed airway kills more quickly than abnormal breathing and circulatory problem. Half of the participants know to assess circulation by checking pulse rate as well rhythm, but only 29.1% reported knowing all parameters used to assess peripheral perfusion. This is contrary to the study by Copper and his colleagues(2011) which revealed that participants responded correctly to the first three questions relating to circulation like an assessment of capillary refill, hypoxia and hypovolemic shock. These show a knowledge gap on the initial assessment of ABCD for nurses at Mnazi Mmoja Hospital.

Half of the participants (50.6%) recognised that, the pulse rate as the first parameter of deterioration of patients rather than respiration rate. This is correlated to the study done by Wenqi and his colleagues (2015) on “Attitudes towards vital signs monitoring in the detection of clinical deterioration” which shown that 56.9% nurses perceived blood pressure as the first sign of deterioration and less important to respiration rate. Whereas much evidence from literature found that, in unstable patients, relative changes in respiratory rate were much greater than changes in heart rate or systolic blood pressure, and thus that the respiratory rate was likely to be a better means of discriminating between stable patients and patients at risk (Cretikos at al., 2008).

Also, the majority of nurses 56.4% did not know the normal urine output (adults) with 33.7% known maximum range of O₂ concentration (%) in bag valve mask (Ambu bag). These findings suggested that though nurses care for critically ill patients in the wards, they do so with insufficient knowledge to back their practice especially on assessment and observation of critically ill patients. These findings corresponded to the study done by (Smith & Poplette, 2002) in which there is a knowledge deficit on minimum hourly urine output (43%) and 28% report the incorrect value of maximum percentage of oxygen delivery using a non-rebreathing mask.

5.3: Nurses practice on observation of critically ill patients in ward

In this study, the majority of respondents (84.3%) agreed that they do care critically ill patients in the wards. This finding corresponded with the literature which indicates that many critically ill patients are cared in the wards due to lack of space in ICU and that many patients developed an acute illness while in the wards (Gorard,1999). Also, corresponded to the study on “Frontline nurses experiences with deteriorating ward patients” reported that nurses in the general wards are increasingly caring for patients with high acuity levels and who are at high risk of clinical deterioration (Chua et al.,2013).

In this study, 40.7% participants used ABCDE approach on an initial assessment of critically ill patients in real practice, while 38.4% did intervention post problem identification. This is similar to the study done in Cairo by (Sayed et al., 2014) on Nurses’ Knowledge and Practices regarding detection and management of acute drug poisoning on which the majority of participants (67%) did not do an initial assessment, and immediate intervention of ABCD.

In addition, the majority of participants of the study (84.9%) measure vital signs even though not all parameters were measured. Most common parameters that were not observed are AVPU and SPO₂. This indicates that nurses still use traditional vital signs. This is supported by the study on “critical care: Monitoring of eight vital signs” which reported that nurses relied only on traditional vital signs to assess patients and suggested that traditional vital signs are not sufficient for identification of critically ill patients,

thus required to add other parameters which are urine output, pain and level of consciousness (Elliott & Coventry, 2012). Furthermore, the majority of participants (64.6%) did the correct intervention for altered parameters, but only 35.5% reassess patients after an intervention. Despite the fact that majority of participants (68%) knew critically ill patients required to be checked their vital signs often, from one hour to 4hourly, in real practice only 26.2% monitor vital signs on regular basis and 32.6 % did documentation. These findings correspond to literature by Mok,(2015) which highlighted that vital signs are not regularly measured, documented or interpreted in the wards, consequently hinders timely recognition of clinical deterioration of patients leading to death, unplanned intensive care unit (ICU) admissions, and cardiopulmonary arrests. Also, another literature reported by (kyriacose et al.,2015) showed that monitoring of vital signs is infrequent and inadequate, interpretation of vital signs is poor, and responses to clinical deterioration are inappropriate.

Furthermore, in this study majority of participant 67.4% did not document findings they obtained from assessment. These match with the study by Jonsson with his colleague (2011) which showed that there is insufficient documentation of physiological parameters of patient in general wards demonstrate actual care of patient received, and concluded that greater measure to prevent patient deterioration is proper documentation. Moreover, the findings match to the study by Hammond et al., (2013) which is reported that early recognition of patient deterioration require accurate and timely documentation of vital signs, Interpretation of findings, and acting quickly and appropriately.

Besides, the majority of participants (64.5%) delivered reports at the time of handover but the reports were not systematic as not follow SBAR (Situation, Background, Assessment, Recommendation). This is supported by Clarke (2014) on “Promoting the 6Cs of nursing in patient assessment” illustrated that patient assessment dependent on effective communication between clinicians in order to provide appropriate care and treatment. Sub-optimal communication is a common occurrence which associated with untoward events, with omissions and inaccuracies in the information shared, despite extensive education and collaboration. Effective communication can equally be enhanced through the use of the SBAR tool.

5.4: Challenges of nurses on caring critical ill patient

In this study, nurses reported different challenges faced when caring critically ill patients in the ward. Among the challenges were inadequate equipments or materials used for critically ill patients (91.3%), shortage of staffs (72.1%), lack or poor knowledge and skills (37.2%), poor cooperation between staffs, relative as well as inter-departmental (34.9%), lack of guidelines or tools (28.5%), workload of nurses (poor nurse : patient ratio) 22.1%, lack of training (10.5%) and poor monitoring of patients (9.3%). Several studies also identified similar or some challenges faces during caring for critically ill patients, including study done by Nazila, (2016) on care of acutely ill patients showed that shortage of staff and equipment, overcrowding of acutely ill patients in general wards, lack of nurse-physician communication using individual judgment instead of guidelines and protocol, lack of knowledge and training in some nurses. Also, another study done by Parker & Higgins, (2015) on challenges confronting clinicians in acute care were poor communication (between nurses and doctors, between allied health staffs and nurses, between families and patients), staffing issues like shortage of staffs, working life like workload, inadequate resources (not enough basic equipment) and lack of maintenance, staff attitudes and behaviors, lack of support and opportunity for further education and so on. Other challenges faced by staff nurses in dealing with critically ill patients in the ward were low salary as the salary not meet their needs, not enough time to rest as work is hectic and work schedule changing in duty shift, heavy workload due to inadequate staffs nurse (clamohoy et al., 2011).

Hence, inadequate equipments or materials, shortage of staffs, lack or inadequate knowledge and skills, lack of guidelines or tools, workload of nurses (poor nurse: patient ratio) which lead to poor monitoring are the core of the barriers to care critically ill patients in the wards.

Thus, there is an urgent need for strategies to reduce the burden and appropriate support system, and an immediate plan to evade these challenges. Similar suggestions were recommended by Nazila, (2016).

5.5: CONCLUSION

This study indicates that majority of nurses do care critically ill patients and that majority of nurses assess patient using ABCD approach. However, their optimal care to such patients is questionable due to lack of adequate knowledge among nurses especially on detecting compromised airways and identification and interpretation of risk parameter that indicate a patient is deteriorating. Even though generally nurses in this study indicated knowledge on the correct approach of assessing critically patient using ABCDE, but in general, there is inadequate knowledge and sub-optimal practice on care of critically ill patients in the ward. So in order to minimize these effects, on job training, CPR courses, are mandatory to the nurses who care for patients in the ward as well as modifying and make guideline and tools and use routinely when provide care in the ward.

5.6: Limitation of the study:

Due to the study being conducted only in one hospital within a short period, the results might not be a true representative of care of general population of critically ill patients in Zanzibar. Further study is recommended to the same purpose by involving more than one hospital to generalize results for the whole country to see a clear picture of the problem.

Another limitation was that due to participant known to be observed during observation, he/she may act unusual and present wrong action, speech, thoughts, and emotions as they may be nervous. In this study, the observer reassured the participants and stayed for a little bit longer in the ward as a participant observer to make them feel comfortable.

5.7: Implications of the study to the nursing practice.

The study gave an opportunity to the nurses to evaluate themselves in the area of knowledge and practices related to the initial assessment of critically ill patients, which will provide strategic direction for improving the level of care to critically ill patients in the hospital.

Inadequate knowledge of the nurses related to the initial assessment of critically ill patients in ward demonstrated in this study could be related to lack of ongoing training,

hence risk quality of care to such patients. Therefore, in order to remove knowledge gap in-service training programs should be instituted. Area of emphasis in these programs should include patient assessment and observation (ABCD), basic anatomy and physiology and cardiopulmonary resuscitation.

Also, knowledge and practice gaps identified in this study mean that nurse tutors need to emphasize extremely the assessment and observation of acutely ill patients to students during their basic nursing education, especially the importance of interpretation of their findings obtain from assessment and observation of patients patients and plan the intervention accordingly.

Availability of enough equipment or materials, guidelines and protocols that assist the critical care nurses in performing his/her work activities (assessment and practice) effectively and increases of skill nurses should go hand-in-hand with organization and improvement of critical care setting at Mnazi Mmoja Hospital, Zanzibar for better quality services.

5.8: RECOMMENDATIONS

This study raised important themes and issues related to knowledge, practices and challenges faced by nurses who care the critically ill patients in the wards at Mnazi Mmoja Hospital, Zanzibar. The recommendations are as follows:

Recommendations for Hospital Management

1. There is need to design and implement a continuous professional education program with special focus on ABCD assessment, CPR course, how to use assessment tools, protocols and standard charts for proper documentation and systematic way of handover issues.
2. To modify charts and to start triage system in the wards which help nurses to identify critically ill patients.

3. The hospital administration should develop and implement a continuity plan on in-service training, frequent refresher courses and formal training programs for nurses who are taking care of critically ill patients to keep them up-to-date.
4. The hospital administration should formulate an operational team that will be in-charge and ensures the adherence to guidelines or protocols and tools use for assessment of critically ill patients and distributes to all wards; this will help in giving the better quality of care to patients.
5. To ensure proper and continued use of tools, guidelines and protocols and charts, there is a need for a supportive environment which can be attained through improving staffing and resources, provision of support supervision by experienced and skilled nurses.

Policy makers/ Training Institutions

1. It is recommended to review existing curriculum to incorporate subject on critical care at a ward settings.
2. It is recommended to develop a plan for follow up of students for their clinical practice to make sure the knowledge gained at the college are applied to their routine clinical work

Future research

1. It is recommended to have further study involving more than one hospital to gain more insight on the knowledge and practices of nurses related to care of critically ill patients and willingness to improve performance. Since this study was a quantitative one, a qualitative or mixed method approach may be used in the future in order of getting an in-depth view of care for critically ill patients among nurses.

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APPENDICES:

APPENDIX A1: QUESTIONNAIRE ENGLISH VERSION

QUESTIONNAIRES FOR NURSES ON CARE OF CRITICALLY ILL PATIENTS IN WARD SETTINGS AT MNAZI MMOJA HOSPITAL ZANZIBAR

Encircle the correct answer

SECTION A

Background Variables

1. Age
.....
2. Sex
 - a) Male
 - b) Female
3. Ward/unit of work
 - a) Male medical ward
 - b) Female medical ward
 - c) Male surgical ward
 - d) Female surgical ward
 - e) Female surgical gynae ward
 - f) Maternity Ward
 - g) Neurological ward
 - h) Emergency department
4. Work experience in clinical setting
.....
5. Level of education
 - a) Diploma
 - b) Degree
 - c) Master degree
 - d) Others

6. Do you get on job training on care critically ill patient in the ward?
Yes..... No.....

SECTION B

Knowledge on initial assessment of critically ill patients

7. As being a nurse, do you assess critically ill patient in your ward?
Yes No
8. Do you have a tool/guideline in your ward to assess critically ill or deteriorating patient?
Yes No.....
9. If yes, name the tool/ guideline
10. What is the initial approach used to assess critically ill patient?
a) Airway, Breathing, Circulation, Level of consciousness,
b) Airway, Breathing, Circulation, Skin color
c) Pain, Disability, Level of consciousness,
d) Laboratory test, Pain, Disability, Urine output
e) Others
11. How do you confirm if a patient has patent Airway?
a) By only feel air on mouth and nostril of the patient
b) Listening if the patient speaks when asking how are you and reply fine
c) Palpate patient's chest
d) Count respiration rate for one minute
12. How do you assess circulation (C)
a) Look only capillary refill within two second
b) Check pulse rate as well as rhythm
c) Observe the color of pupil if equal react with light
- 12.a List three parameters used to assess peripheral perfusion/ peripheral circulation.
.....
.....
.....

13. Write the normal adult range of physiological parameter.

Respiration rate

- a) 6 - 8b/min
- b) 10 – 25b/min
- c) 12 – 20b/min
- d) 6 – 30b/min

Heart rate

- a) 60 – 100
- b) 60 – 110
- c) 50 – 120
- d) 65 – 100

Oxygen saturation level

- a) 90 – 100%
- b) 95 – 100%
- c) 98 – 100%
- d) 89 - 100%

Systolic blood pressure

- a) 90-180mmhg
- b) 90- 140mmhg
- c) 60- 80mmhg
- d) 100- 220mmhg

Temperature

- a) 35.5C – 37.5C
- b) 38C - 39C
- c) 38C – 38.5C
- d) 39C – 40C

14. For the patient who is deteriorating, what is the first thing to check?

- a) Breathing
- b) Circulation
- c) Airway

15. Which of the following parameter you consider the patient is at high risk?
 - a) Pulse rate 120 b per min
 - b) Respiration 25- 35 b per min
 - c) Temperature 37.5- 38^oC
16. What is your interpretation if the patient 3 GCS?
 - a) Unconscious
 - b) Conscious
 - c) Alert
17. What letter U in AVPU stands for?
 - a) Unconscious
 - b) Unresponsive
 - c) Unwell
 - d) Underweight
18. What is the adult normal urine output?
 - a) >0.5 ml/kg/hr
 - b) < 0.5 ml/kg/hr
 - c) 0.8ml /kg/hr
19. If the patient is catheterize and output is less than 0.5ml/kg/hr for 2 consecutive hours indicate what?
 - a) Is a normal condition of catheterized patient
 - b) Indicate renal hypo perfusion and assess for further action
20. What would you do in a patient with respiratory rate of less than 4 b per min
 - a) Give oxygen with venturi mask
 - b) Give oxygen with nasal cannula
 - c) Ventilation with Bag valve Mask (Ambu bag)
 - d) Administration of broncho dilators
 - e) Others
21. What is the maximum deliverable oxygen concentration (%) using a bag valve mask

22. If you are a nurse working in medical or surgical ward admitted patient with the history of vomiting, general body weakness on admission vital signs was BP 60/50mmhg, PR 57b/min, RR 25b/min, SPO2 95%, T 37.8C what are the priority intervention.
- Administer oxygen via nasal cannula
 - Keep IV open and run a normal saline
 - Waiting Dr to review the patient
 - Give Tab Paracetamol
 - Others
23. Mr. John is a known case of Hypertensive Heart disease ,Discharge from hospital three days ago, but re- admitted to the ward, general condition was not good he is dyspneic RR 35b/min, SPO2 85mmhg, PR 40b/min, BP 60/50mmhg
- Administer oxygen with non re-breather mask and start atropine.
 - Only monitoring and observe of patient after every one half an hour.
 - Report to nurse incharge .
 - Wait Dr to correct it.
24. How often you are required to check vital signs to the critically ill patient?
- Once in shift
 - Whenever necessary
 - One hourly to four hourly
 - More than four to eight hourly
25. Which of the following physiological parameter do you measure and record it
- | | | |
|------------------------------|----------|---------|
| a) Blood pressure: | Yes..... | No..... |
| b) Temperature: | Yes..... | No..... |
| c) Respiration rate: | Yes..... | No..... |
| d) Oxygen saturation rate: | Yes..... | No..... |
| e) Glasgow coma scale/ AVPU: | Yes..... | No..... |
| f) Intake and output: | Yes..... | No..... |
26. Have you ever cared serious ill patients?
- Yes..... No.....

27. Have you practice cardio pulmonary resuscitation (CPR) to a patient without pulse?

Yes No.....

SECTION C

Nurses challenges on careering critically ill patients

List challenges that hinder proper care of critically ill patient in your ward

- a)
- b)
- c)
- d)
- e)

THANK YOU FOR YOUR COOPERATION

APPENDEX A2: DODOSO LA KISWAHILI

Utafiti: Kuhusu kuelezea maarifa na vitendo vya wauguzi kuhusiana na utoaji wa huduma za kwa wagonjwa mahututi wanaolazwa wodini Hospital ya Mnazi Mmoja, Zanzibar.

NAMBA YA UTAMBULISHO (Ijazwe na mtafiti mkuu)

Maelekezo: Tafadhali jaza au zungushia jibu sahihi.

Sehemu “A”. Takwimu za washiriki

1 Umri

.....

2. Jinsia

A. Mwanammke

B. Mwanamme

3. Sehemu ya kazi

A. Wodi ya matibau wanaume

B. Wodi ya matibabu wanawake

C. Wodi ya upasuaji wanaume

D. Wodi ya upasuaji wanawake

E. Wodi za magonjwa ya wanawake

F. Wodi ya wazazi

G. Wodi ya mishipa ya fahamu

H. Kitengo cha dharura na ajali

4. Uzoefu wa miaka ya kufanya kazi katika mazingira ya wordini

.....

5. Kiwango cha elimu

i) Masters

ii) Shahada (Bachelor)

iii) Stashahada

6 Je, umewahi kuhudhuria mafunzo yoyote juu ya utoaji wa huduma kwa wagonjwa mahatuti waliolazwa wodini?

Ndio.....

Hapana

Sehemu B

Maarifa

Uelewa juu ya tathimini ya wagonjwa mahututi

7. Ukiwa Kama muuguzi umewahi kufanya tathmini muhimu kwa wagonjwa mahatuti katika wodi yako?

Ndiyo

Hapana.....

8. Je, unachombo/muongozo katika wodi yako kwa kutathmini wagonjwa mahututi au kuzorota wamgonjwa?

Ndiyo

Hapana.....

9. Kama ndiyo, jina la chombo

10. Ni mbinu gani ya awali hutumika kutathmini mgonjwa mahututi?

A. Njia ya hewa, Kupumua, mzunguko wa damu, kiwango cha fahamu

B. Njia ya hewa, Kupumua, mzunguko wa damu, Rangi ya ngozi

C. Maumivu, Ulemavu, kiwango cha fahamu,

D. Vipimo vya maabarai, maumivu, Ulemavu, kiwango cha mkojouliotoka

E. Nyingine taja

11. Jinsi gani unaweza kuthibitisha kama njia ya hewa ya mgonjwa ipo vizuri?

A. kwa kuhisi hewa tu inayotoka mdomoni na puani kwa mgonjwa

B. kwa Kumsikiliza mgonjwa kama anaongea au wakati una mwuliza swali na kukujibu

- C. Kugusa kifua cha mgonjwa
- D. Kwa kuhesabu kiwango cha kupumua kwa dakika moja

12. Jinsi ya kufanya tathmini ya mzunguko wa damu (C)

- A. Kwa kubonyeza tu kwenye ncha za vidole na mzunguko wa damu kurudi chini ya sekunde mbili
- B. Angalia kiwango cha mapingo ya moyo kama yapo kwenye mtiririko unaotakiwa
- C. Angalia kama mboni ya jicho inatanuka wakati wa mwanga mkali

13. chagua viwango vya alama muhimu vya kawaida kwa mtu mzima.

Kiwango cha kupumua

- A. 6 - 8b / min
- B. 10 - 25b / min
- C. 12 - 20b / min
- D. 6 - 30B / min

Kiwango cha mapigo ya moyo

- A. 60-100
- B. 60-110
- C. 50-120
- D. 65-100

Kiwango cha oksijeni kwenye mzunguko wa damu

- A. 90-100%
- B. 95-100%
- C. 98-100%
- D. 89-100%

Kiwango cha shinikizo la damu

- A. 90-180mmhg
- B. 90 140mmhg
- C. 60- 80mmHg

D. 100- 220mmhg

Kiwango cha joto la mwili

A. 35.5C - 37.5C

B. 38C - 39c

C. 38C - 38.5C

D. 39c - 40C

14. Kwa mgonjwa ambaye ni kuzorota, ni kitu gani kwanza kwa kuangalia?

A. Kupumua

B. Mzunguko wa damu

C. Njia ya hewa

15. Ni vipimo vipi vifuatavyo unaweza kufikiria wewe mgonjwa akiwa navyo atakuwa katika hatari kubwa

A. kiwango cha mapigo ya moyo 120 b per min

B. kupumua 25- 35 b per min

C. Joto 37.5-38°C

16. Ni nini tafsiri yako kama mgonjwa akiwa ana alama 3 ya kipimo ya ufahamu

A. Hajitambui kabisa

B. Anajitambua

D. Makini

17. Je herufi U katika AVPU inasimama mbadala ya?

A. Hajitambui kabisa

B. imekwama

C. vibaya

D. Uzito pungufu

18. Kiwango cha kawaida cha pato la mkojo kwa mtu mzima

A. kipato cha mkojo kikubwa kuliko 0.5 ml / uzito / saa

- B. Kipato cha mkojo kidogo kuliko 0.5 ml / uzito / saa
- C. Kipato cha mkojo no 0.8ml / uzito/ saa
19. Kama mgonjwa amewekewa mpira wa mkojo na pato la mkojo ni chini ya 0.5ml / kg / hr kwa masaa 2 mfululizo zinaonyesha nini?
- A. Je, hali ya kawaida kwa mgonjwa aliyewekewa mpira wa mkojo?
- B. Inaonyesha upungufu wa mzunguko wa damu kwenye figo na kutathmini kuchukua hatua zaidi
20. Ungefanya nini kwa mgonjwa anayepumua chini ya kiwango kinachotakiwa kupumua ya chini ya mara nne(4) kwa dakika
- (A) Kutoa oksijeni pamoja na mask venturi
- (B) Kutoa oksijeni pamoja na pua canula
- (C) uingizaji wa hewa kwa Ambubag
- (D) kumpa dawa ya kufungua njia ya hewa
- (E) nyingine
21. Ni kiwango gani cha oksijin kinachotolewa katika kifaa cha kumsaidia mgonjwa kupumua (Ambu bag)
22. Kama wewe ni muuguzi unafanya kazi katika wodi ya matibabu au upasuaji akalazwa mgonjwa mwenye historia ya kutapika, kwa ujumla udhaifu wa mwili wakati wa kumlaza vipimo vyake muhimu vilikuwa kama ifuatavyo BP 60 / 50mmhg, PR 57b / min, RR 25b / min, Spo2 95%, T 37.8 C atapewa kipaumbele gani katika huduma
- A. Kumpa oksijeni kupitia mipira ya pua
- B. Kumtafuta mshipa na kuweka njia kwa ajili ya maji ya kwenye mshipa
- C. Kumsubiria daktari aje kumuona
- D. Kumpa vidonge vya panadol ameze
- E. Nyingine
23. Bwana John ni mgonjwa anajulikana kwa kesi ya ugonjwa wa shinikizo la damu kwenye moyo, aliruhusiwa kutoka hospitali siku tatu zilizopita, lakini aliudi kulazwa tena kwenye wodi hiyo, hali yake kwa jumla haikuwa nzuri yeye alipumua kwa

shida (RR 35b / min,) kiwango cha oksijin mwilini(SPO2 85mmhg,) mapigo ya moyo ni(PR 40b / min) na shinikizo la damu (BP 60 / 50mmhg)

- A. Kumpa oksijeni pamoja yenye njia ya kumsaidia kumpa hewa kwa wingi na kumpa atropine.
- B. Mpime mgonjwa na kumchunguza kila baada ya kila nusu saa moja.
- C. Toa taarifa kwa muuguzi wa zamu.
- D. Subiri mpaka daktari aje kumhudumia.

24. Ni mara ngapi unatakiwa kuangalia ishara muhimu kwa wagonjwa mahututi?

- A. Mara moja katika mabadiliko
- B. Kila wakati inapohitajika
- C. kila baada ya saa moja mpaka manne
- D. Zaidi ya masaa 4-8

25 . Ni viashirio vipi muhimu kati ya zifuatazo unapima na kurekodi yake

- | | | |
|---------------------------------------|-------------|--------------|
| (A) Shinikizo la damu: | Ndiyo | hapana |
| (B) Joto: | Ndiyo | hapana |
| (C) kiwango cha kupumua:Ndiyo | Ndio | hapana |
| (D) kiwango cha oksijeni kwenye damu: | Ndiyo | hapana |
| (E) kipimo cha kupima fahamu: | Ndiyo | hapana |
| (F) alichokula na kilichotoka pato: | Ndiyo | hapana |

26. Je, umewahi kuhudumia wagonjwa wenye hali mbaya ya ugonjwa katika word yako ?

Ndio.....hapana.....

27. Je umewahi kufanya mazoezi kufufua moyo na mapafu (CPR) kwa mgonjwa asiesikikana mapigo ya moyo?

Ndiyo Hapana.....

SEHEMU YA C

Wauguzi na changamoto wakati wa kuhudumia wagonjwa mahututi

28. Orodha vikwazo vinavyozuia huduma nzuri ya muhimu wagonjwa mahututi katika wodi yako

- (A)
- (B)
- (C)
- (D)
- (E)

ASANTE KWA USHIRIKIANO WAKO

APPENDIX B1: OBSERVATION CHECKLIST

Observational check list for nurses practice on assessing and providing nursing care to critical ill patients in the ward

CODE NO..... (To be filled by researcher).

Working place

S/N	SKILLS TO BE OBSERVED	PERFORMANCE		REMARKS
		YES	NO	
1	During assessment nurses use ABCDE approach			
2	Intervene if Identify problem before moving to the next steps			
3	Measure vital signs at the time of admission			
4	Set of parameters observe (T,PR,RR,BP,SPO2,AVPU)			
5	Correct intervention done if altered parameters			
6	Re assess after intervention			
7	Monitoring plan is done on regular bases			
8	Report findings			
9	Documentation of findings			
10	Delivery of report(hand over sift to shift or during the nursing activity)			

APPENDIX B2: ORODHA YA UCHUNGUZI

CODE NO..... (To be filled by researcher).

NAMBARI YA UTAMBULISHO (Ijazazwe na mtafiti).

Sehemu ya kazi

Orodha ya uchunguzi wa ujuzi wa huduma za mgonjwa mahatuti zitolewazo wordini wordini

S/No	UJUZI UTAKAOCHUNGUZWA	UTENDAJI		KUTAJA
		NDIO	HAPANA	
1.	Wakati wa kutathmini mgonjwa, nesi anatumia mbinu za awali ABCDE njia ya hewa, kupumua, mzunguko wa damu, ulemavu, mfichuo			
2.	Kuchukua hatua wakati anapogundua tatizo wakati wa kutathmini kabla ya kwenda hatua nyingine			
3.	Kupima ishara muhimu wakati wa kulaza mgonjwa mara afikapo wodini			
4.	Kupima ishara zote muhimu (T,PR,RR,BP,SPO2,AVPU)			
5.	Kuchukua hatua sahihi kama kuna mabadiliko ya ishara muhimu			
6.	Tathmini tena ishara muhimu baada ya kuchukua hatua			
7.	Mpangilio wa ufatiliaji ishara muhimu unafanyika kwa mara kwa mara			
8.	Toa taarifa kwa ishara muhimu ziisivo kawaida			
9.	Rekodi uingiaji na utoaji wa vitu maji maji katika chati ya mgonjwa na uhesabu usawa maji maji ndani ya masaa 24			
10.	Anakabidhi report ya mgonjwa kiutaratibu unaotakiwa			

APPENDIX C1: INFORMED CONCENT



MUHIMBILI UNIVERSITY OF HEALTH AND ALLIEND HEALTH SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS

ID NO

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Greetings!

My name is **HASINA MOHAMMED SULEIMAN** I am a student nurse pursuing MSc Critical Care and Trauma conducting a study on **Nurses knowledge and practice on care of critically ill adult patients in ward setting at Mnazi Mmoja Hospital, Zanzibar**

Purpose of study

Describe nurses' knowledge, practices and challenges on care of critically ill adult patients in ward setting at Mnazi Mmoja Hospital, Zanzibar

What participation involves

Participation will be voluntary, without forcing and you are free to withdraw at any time, if you agree will require you to answer questions it will take 35 minutes to fill out the questionnaire.

Confidentiality

All information collected will be confidential and this will be maintained by use of codes, no names will be asked or required. Information collected from the questionnaire will be entered into computers with only the study identification number

Benefits

No direct benefits in term of money payment, your information that you are going to contribute in this study will be beneficial for the development of nursing profession both in nursing practice and care.

Compensation:

There will be no compensation of any kind for participation

Risk

The study will not harm you physically, psychologically or emotionally.

Rights to Withdraw and Alternatives

Participation in this study is voluntary, you have the right to refuse to participate, and many withdraw from the study even if you have already given your consent. Refusal to participate or withdraw from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

Who to Contact

If you ever have questions about this study, you should contact the principle investigator

Hasina Mohammed Suleiman, Tel no:+255777844151,P.O.Box 70, Zanzibar.

If you ever have questions about your rights as a participant, you may contact or call the Director of Research and Publications Committee Prof. Joyce Masalu at MUHAS, P.O. Box 65001, Dar es Salaam. Tel: 2150302-6.

Signature:

Do you agree to participate?

Participant agrees Participant does NOT agree

I, _____ have read the contents in this form.

I agree to participate in this study.

Signature of participant _____

Signature of the researcher _____

Date_____

APPENDIX C2: FOMU YA RIDHAA



CHUO KIKUU CHA SAYANSI ZA AFYA NA TIBA MUHIMBILI **MKURUGENZI WA UTAFITI NA MACHAPISHO**

Namba ya utambulisho

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Fomu ya ridhaa

Salamu!

Jina langu ni **HASINA MOHAMMED SULEIMAN**. Mimi ni mwanafunzi muuguzi shahada ya pili ya huduma kwa wagonjwa mahatuti na majeraha Ninafanya utafiti juu ya uwelewa utoaji wahuduma kwa wauguzi kuhusiana uchunguzaji na utoaji wa huduma kwa wagonjwa walio katika hali mbaya mawordini katika Hospital ya Mnazi Mmoja Zanzibar.

Dhumuni la utafiti

Kuelezea maarifa, vitendo na changamoto za wauguzi kuhusiana utoaji wa huduma kwa wagonjwa mahatuti Hospital ya Mnazi Mmoja Zanzibar.

Kwa namna gani utashiriki

Ushiriki wako kwenye utafiti ni wa hiari na bila kushindikizwa na upo huru kujitoa wakati wowote. Kushiriki kwako kunahitaji kuijibu maswali yanayohusiana na utafiti huu.

Usiri

Taarifa zote tutakazozikusanya zitabaki kua ni siri na tunakuhakikishia usiri huo kwa kutumia namba na hatutumia jina lako. Sehemu yeyoto ile. Taarifa tutakazokusanya

kwenye dodoso letu tutaziingiza kwenye komputa na sisi ndio tutakua na haki ya kuzitumia taarifa hizo na si vyenginevyo.

Faida

Hakuna faida ya moja kwa moja kama kupata pesa kwa mshiriki, ingawa matokeo ya utafiti yatasaidia kuingeza ufanisi kwa waguzi sehemu za kazi kuinua na kutoa huduma nzuri kwa wagonjwa wanaoumwa sana kutegemeana na aina ya ugonjwa.

Malipo

Hakutakua na malipo yeyote kwa mshiriki.

Dhara

Utafiti huu hautakuathiri kimwili, kiaakili wala kifikira.

Haki ya kujitoa

Ushiriki wako katika utafiti huu ni wa hiari. Kama utakataa kushiriki katika utafiti huu au utajitoe muda wowote ule hata kama mwanzoni uliridhia hakutokua na hasara na dhara yeyote ile kwako. Kutokushiriki au kujitoe muda wowote katika utafiti huu hakutakua na hasara yeyote.

Mawasiliano

Kama unasuaali lolote kuhusu utafiti huu, tafadhali usisite kuuliza kupitia namba zifuatazo: Mtafiti mkuu, **Ms. Hasina Mohammed Suleiman,**

(Tel no: +255777844151), P.O.Box 70, Zanzibar.

Kama unamaswali kuhusu haki zako kama mshiriki unaweza kuwasiliana na au piga simu kwa Mkurugenzi wa utafiti na machapisho kamati Prof. Joyce Masalu, MUHAS, P.O. Box 65001, Dar es Salaam. Tel: 2150302-6.

Sahihi:

.....

Umekubali kushiriki katika utafiti huu?

Mshiriki amekubali..... Mshiriki amekataa.....

Mimi, _____ nimesoma na kuelewa ujumbe katika fomu hii. Maswali yangu yamejibiwa, nimekubali kusiriki katika utafiti huu.

Sahihi ya mshiriki _____

Sahihi ya mtafiti _____ Tarehe _____

APPENDIX D1: LETTER FOR ETHICAL CLEARANCE

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES**

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz



Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. MU/PGS/SAEC/Vol. IX

12nd April, 2017

Ms. Hasina Mohamed Suleiman
MSc. Critical Care and Trauma
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "NURSES KNOWLEDGE AND PRACTISE ON CARE OF CRITICALLY ILL ADULT PATIENTS IN WARDS SETTING AT MNAZI MMOJA HOSPITAL, ZANZIBAR."

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from 13rd April, 2017 to 12nd April, 2018. In case you do not complete data analysis and dissertation report writing by 12nd April 2018, you will have to apply for renewal of ethical clearance prior to the expiry date.

Please liaise with the Directorate of Finance to get your research funds.


Prof. Andrea B. Pembe
DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publication
cc: Dean, School of Nursing

APPENDIX D2: INTRODUCTION LETTER

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES**

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz



Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. HD/MUH/T. 310/2015

20th April, 2017

Head of Research and Training Unit
Mnazi Mmoja Hospital
P.O. Box 672
ZANZIBAR.

Re: INTRODUCTION LETTER

The bearer of this letter Ms. Hasina Mohammed Suleiman is a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc. Critical Care and Trauma.

As part of her studies she intends to do a study titled: "*Nurse knowledge and practise on care of critically ill adult patients in wards settings at Mnazi Mmoja Hospital, Zanzibar*".

The research has been approved by the Chairman of University Senate.

Kindly provide her the necessary assistance to facilitate the conduct of her research.

We thank you for your cooperation.


Ms. A. Ndyekiza
For: **DIRECTOR, POSTGRADUATE STUDIES**

cc: Dean, School of Nursing
cc: Ms. Hasina-Mohammed Suleiman

APPENDIX E1: PERMISSION LETTER FROM MINISTRY OF HEALTH – ZANZIBAR

SERIKALI YA MAPINDUZI - ZANZIBAR
ZANZIBAR REVOLUTIONARY GOVERNMENT
WIZARA YA AFYA
MINISTRY OF HEALTH



BARASA LA STAFITI, WAU
TEL: 3108750
FAX: 330 54 2261
TELEGRAM: HEALTHMIN



MOH RESEARCH COUNCIL
P.O. Box 226
ZANZIBAR

ETHICAL CLEARANCE LETTER

PROTOCOL NUMBER: ST /0008/APRIL/017

DATE: 21 APRIL, 2017.

**HASINA MOHAMMED SULEIMAN
STUDENT RESEARCHER**

PROTOCOL TITLE "Nurses knowledge and Practice on care of Critically Patients in ward setting at Mnazi Mmoja Hospital in Zanzibar."

RE: ETHICAL CLEARANCE FOR CONDUCTING MEDICAL RESEARCH IN ZANZIBAR.

This is to certify that the research protocol entitled "Nurses knowledge and Practice on care of Critically Patients in ward setting at Mnazi Mmoja Hospital in Zanzibar." was received and reviewed by the Zanzibar Medical Research and Ethics Committee on April, 2017.

We would like to inform you that the decision of the committee to this protocol was "Approved".

The permission to undertake data collection is for one year beginning from the date of this letter.

The principal investigators have to provide progress report after six months and final report to the Ministry of Health and the Zanzibar Medical Research and Ethics committee ZAMREC.

Seek permission to publish from ZAMREC.

Any change made to the protocol need to be submitted to the committee for approval prior to its implementation

Thanks in advance,

DR. MSAFIRI MARIJANI
SECRETARY
ZAMREC
ZANZIBAR.



APPENDIX E2: PERMISSION LETTER FROM MNAZI MMOJA HOSPITAL – ZANZIBAR

2 Mei 2017

Hasina Mohammed Suleiman
S. L. Barua 70
Zanzibar

**YAH: OMBI LA KUFANYA UTAFITI KWENYE
HOSPITALI YA MNAZI MMOJA**

Rejea barua yako ya tarehe 24 April 2017 yenye mada ya hapo juu.

Ruhusa imetolewa kufanya utafiti huu ndani ya hospitali ya Mnazi mmoja, ni imani yangu kuwa kazi ya kudadisi utafanya mwenyewe au msaidizi ambae hatokuwa kazini wakati wa kazi yako.

Ripoti ya kazi hii itolewe kwenye ngazi zifuatazo:-

- Kwenye mkutano wa kila wiki “*Continuous Nursing Education*” kwa ajili ya taaluma kwa wauguzi wenzio
- Kwa maandishi kwenda kwa Mkurugenzi mtendaji wa hospitali kwa matumizi ya baadae na kumbukumbu.

Natanguliza shukurani za dhati kwa uamuzi wako, nakutakia kazi njema na masomo mema.

Ahsante


Mwyni I. Msellem
/Mkuu
Kitengo cha Mafunzo na Utafiti
Hospitali ya Mnazi mmoja
Wizara ya Afya –Zanzibar

