KNOWLEDGE, ATTITUDE, AND PERCEIVED BARRIERS TO PROVIDE ANALGESIA FOR LABOUR PAIN AND VAGINAL DELIVERY AMONG HEALTHCARE PROVIDERS AT MUHIMBILI NATIONAL HOSPITAL.

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By

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A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree of Master Medicine in Obstetrics and Gynecology at

Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for Acceptance of the dissertation entitled in **"KNOWLEDGE, ATTITUDE, AND PERCEIVED BARRIERS TO PROVIDE ANALGESIA FOR LABOUR PAIN AND VAGINAL DELIVERY AMONG HEALTHCARE PROVIDERS AT MUHIMBILI NATIONAL HOSPITAL."** in partial fulfillment of the requirements for the degree of Master of Medicine in Obstetrics and Gynecology at Muhimbili University of Health and Allied Sciences.

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Date: _____

_____

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(Co-Supervisor)

Date: _____

DECLARATION AND COPYRIGHT

I, **Franco S. Henjewele** declare that this **dissertation** is my original work and that 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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LIST OF ABBREVIATIONS

ACOG	American College of Obstetrics and Gynecology
AMO	Assistant Medical Officer
ANC	Ante-Natal Clinic
APGAR	Appearance, Pulse, Grimace, Activity, Respiration
HCP	Health care provider
IRB	Institution Review Board
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Healthy and Allied Science
OBGY	Obstetrics and Gynecology
SOP	Standard Operating Procedures
WHO	World Health Organization

ABSTRACT

Background: Labour analgesia administration is an essential component of standard obstetric care. Using analgesia for labour pain relief is not common in Africa, especially Sub-Saharan Africa. At Muhimbili National Hospital the practice of giving analgesia to a labouring woman is not commonly done despite the fact that health care providers are aware that many women are in need of it and they request analgesia when in labour.

Objective: To assess knowledge, attitude, and perceived barriers to provide analgesia for labour pain and vaginal delivery among healthcare providers at Muhimbili National Hospital.

Methods: A cross-sectional study was conducted in December 2023, written consent was processed and obtained from each healthcare provider before data collection and structured self-administered questionnaire was used, the collected data were coded and analyzed using SPSS version 23. Descriptive statistics were computed to determine frequencies and percentages finally data were presented using texts and tables.

Results*:* A total of 202 health care providers participated with majority being midwifes and anesthetists. Less than a half 87(43.1%) of the healthcare providers had good knowledge and about a third 74(36.6%) of the participants had good attitude towards provision of analgesia for labour pain and vaginal delivery. Less than a quarter 29 (14.4%) of the participants reported to provide analgesia for labour pain and vaginal delivery inconsistently and among them, the most common method 24(82.8%) was systemic (intravenous or intramuscular) analgesia. Most of the healthcare providers 175(86.6%) responded that “absence of clear guideline and protocol” that guide provision of analgesia for labour pain as a major perceived barrier for healthcare provider to deliver the service followed by “lack of knowledge” to administer analgesia 118(58.4%) and unawareness among healthcare provider 108(53.5%) on available choices of labour pain analgesics.

Conclusion: Less than half of participants have good knowledge and attitude to provide labour pain analgesia and majority of the healthcare provider do not routine provide analgesia for labour pain.

OPERATIONAL DEFINITION

Knowledge: If a participant correctly answered at least ≥70% of all knowledge questions, they are regarded to have good knowledge.

Attitude: If a participant correctly answered ≥70% of all attitude questions, they are said to have good attitude.

Practice-a participant was defined as practicing labour analgesia if he/she ever prescribed or provided analgesia to a pregnant woman in labour.

Labour pain analgesia: the use of injectable (iv/i.m) or regional/local analgesics to relieve pain during labour and vaginal delivery.

1.0 INTRODUCTION

1.1 Background

Labour pain is arguably the most severe pain most women endure in their life during labour and vaginal delivery (Lawani *et al.*, 2014). The cervix, uterus, and upper part of the vagina are all innervated by nociceptive fibers that are stimulated by uterine contraction and cervical dilatation during the first stage of labor. These fibers are transmitted through visceral afferent sympathetic nerves with poorly localized visceral pain and conducted by the T10 through L1 nerve roots. Later, as the fetal head descended, stretching the perineum and vaginal pain fibers via the pudendal nerve and spinal roots S2–S4, the pain increased in intensity (Arendt and Segal, 2008, Cunningham *et al.*, 2022).

The American College of Obstetricians and Gynecologists (ACOG) states there is no other situation where it is deemed acceptable for a person to go untreated for severe pain that is amenable to safe intervention while being treated by a healthcare provider (HCP). Women prefer to have their labour and delivery pain managed and more than two thirds of African women who have given vaginal birth agree that pain medication is necessary during labour and that untreated labour pain makes them dissatisfied with their obstetric care (Ashagrie, Fentie and Kassahun, 2020, Lawani *et al.*, 2014). Based on the most recent WHO and ACOG recommendations, labour analgesia is a crucial component of the standard obstetric intervention that should be given to a pregnant woman who is in labour (ACOG 'Practice bullet in' Pain, 2017, Nabukenya *et al.*, 2015, World Health Organizations, 2018).

Parenteral opioids, such as Fentanyl, morphine, and remifentanil, continue to play a role in labor pain management because they are affordable and their use doesn't require a certain specialized knowledge however, they have little impact on maternal pain scores, provide unreliable analgesia, and frequently have side effects like nausea and vomiting and fetal effect (ACOG 'Practice bullet in' Pain, 2017). In contrast to most other options for labour pain relief, regional analgesia, which includes epidural and spinal techniques, commonly uses Bupivacaine and Lignocaine, requires administration by a trained healthcare provider-an anesthesiologist or anesthetist with good experience and provides satisfactory pain relief during labour with little

adverse effects on the mother or the newborn (ACOG ‘Practice bullet in’ Pain, 2017, Narayanappa et al., 2018,).

In prior research, larger concentrations of local anesthetic-induced motor blockade and the resulting reduced maternal expulsive attempts were specifically at a time related to prolonging of the second stage of labor as well as increased risk of caesarean delivery. The method, medication, and dosage are chosen depending on a wide range of variables, including the preferences of the patient, their health status, any contraindications, and the healthcare provider's experience (Cunningham *et al.*, 2022, McCauley, Stewart and Kebede, 2017).

The duty of HCP is to inform the pregnant mothers about the need for labour pain analgesia, assist them in making that decision, and create comprehensive programs and guidelines that would easily facilitate provision of the services (Narayanappa *et al.*, 2018). Health care providers in developing nations, including Sub-Saharan Africa, do not frequently administer labour pain analgesia due to a number of barriers, including a lack of trained healthcare providers, inadequate analgesic service provision, a lack of sophisticated equipment, perceived fear of respiratory distress, a perception that the procedure is expensive, and late presentation in labour (Karn *et al.*, 2016, Lawani *et al.*, 2014). Currently, there are not many data about the knowledge, attitude and perceived barriers to provide analgesia to women in labour at MNH. It was essentially important in this regard to determine knowledge, attitude and perceived barriers among healthcare providers towards provision of analgesia for labour pain at Muhimbili National Hospital.

1.2 Problem Statement

Pain relief during labour is a common demand frequently women requesting from health care providers. Despite WHO and ACOG recommendations that analgesia for labour pain is an important component of standard treatment and should be administered to a woman who requests it during labour, the practice to reduce labour pain has been uncommon, especially in the low and middle income countries, like Tanzania (ACOG 'Practice bullet in' Pain, 2017, Lawani *et al.*, 2014, World Health Organization, 2018,).

In Sub-Saharan Africa, particularly in Nigeria and Ethiopia more than two-third of women who have had previous labour would agree to receive analgesia if the service was provided in the facility (Lawani et al., 2014, McCauley, Stewart and Kebede, 2017, Mousa et al., 2018).

Currently; there are not many data about the knowledge, attitude and perceived barriers to provide analgesia to women in labour at Muhimbili National Hospital. It was essentially important in this regard to determine knowledge, attitude and perceived barriers among healthcare providers towards provision of analgesia for labour pain at Muhimbili National Hospital.

1.3 Conceptual Frame work

Providing labour pain analgesia can be affected by attitude, knowledge however, presence of barriers may hinder the provision of analgesia for labour pain as well.

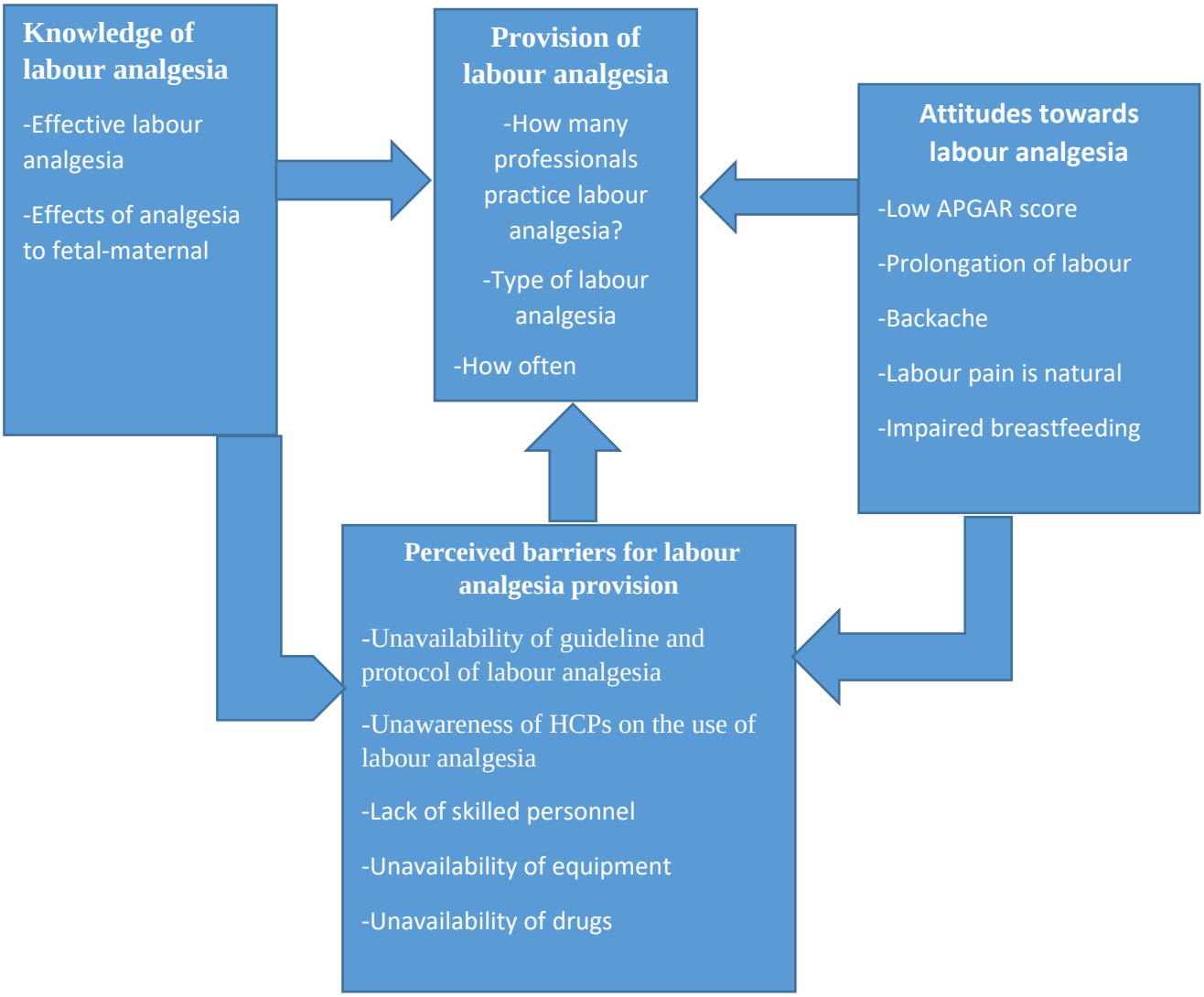


Figure 1: A conceptual frame work showing how each objective will be assessed.

1.4 Rationale of the Study

The aim of this study was to determine the level of knowledge, attitude and practice of health care provider on the use of labour pain analgesia at MNH. The process of the study and the results would enlighten and influenced awareness and practice of labour pain analgesia among health care providers because the study identified potential perceived barriers which prevent routine provision of labour pain analgesia services at MNH. Also, the study's serve as a starting point for future research in the field and as the basis for a strategic plan to improve the management of labour pain services at MNH.

1.5 Research Questions

1. What is the knowledge of using analgesia for labour pain and vaginal delivery among healthcare providers at Muhimbili National Hospital?
2. What is the attitude of using analgesia for labour pain and vaginal delivery among healthcare providers at Muhimbili National Hospital?
3. What is the practices of using analgesics for labour pain and vaginal delivery at Muhimbili National Hospital?
4. What are the perceived barriers regarding the provision of labour pain analgesia among healthcare providers at Muhimbili National Hospital?

1.6 Objectives

1.6.1 Broad objective

To assess the healthcare provider's knowledge, attitude and perceived barriers regarding the use of analgesia for labour pain and vaginal delivery at Muhimbili National Hospital.

1.6.2 Specific objectives

1. To determine knowledge of healthcare providers about labour pain analgesia
2. To determine attitude of healthcare providers about labour pain analgesia
3. To determine practice of healthcare providers about labour pain analgesia
4. To describe perceived barriers to provide analgesia for labour pain

2.0 LITERATURE REVIEW

In high-income nations, technique selection and complications are the main concerns, whereas in low-income nations, the focus is on labour analgesia awareness, acceptance, and accessibility (Nabukenya *et al.,* 2015). It is a patient who experiences extreme pain at the expense of a health care providers, who occasionally encounter a setback in their knowledge of how to administer analgesia during labour or who faces other confounding factors related to attitudes, such as false perceptions, myths, and perceived adverse outcomes of the practice (Narayanappa *et al.,* 2018). More than 50% of pregnant women in low- and middle-income countries, including sub-Saharan Africa, accept the use of labour analgesics. Those opposing acceptance argue that "the pain of labour is natural" and that a woman must inevitably undergo it at some point. Others worry that the unborn baby might experience problems. Despite there being very little awareness of its use, a high proportion of women would accept analgesia to relieve labour pain if offered (O. Olanyeni, Aimalchu *at el 2003*). In absence of contraindications, maternal request is a sufficient justification for analgesic use during labour, and no woman should be denied analgesia due to her financial situation (ACOG 'Practice bullet in'Pain, 2017).

2.1 knowledge and Attitude

The majority of health care providers particularly the anesthesiologists in India agreed that epidural analgesia has no effect on the cesarean rate, assisted vaginal deliveries, or the lengthening of the first and second stages of labour. They also had good knowledge and attitude toward the use of analgesia during labour. On the other hand, the majority of anesthesiologists did not think that epidural analgesia would cause maternal pyrexia, backaches, impeded breastfeeding, or be linked to a low Apgar score of the newborn (Narayanappa *et al.,* 2018).

More than two-thirds of health care providers in Nigeria and Ethiopia believe that analgesia during labour would give women a better birthing experience, but almost a quarter of them believe that labour pain shouldn't be relieved for the following reasons: labour is a natural process, pain relief will elongate the labour, pain relief will negatively affect the baby, and analgesia may cause complications of labour. Although labour analgesia is not commonly used in sub-Saharan Africa, the majority of healthcare providers acknowledge that they have been

requested by labouring mothers to provide it and that they would do so if they had the necessary facilities and resources available (Lawani *et al.*, 2014, McCauley, Stewart and Kebede, 2017, Mousa *et al.*, 2018). It was important to determine attitudes and knowledge of health care providers on the use of analgesia for labour pain at MNH because little was known regarding level of knowledge and attitude among healthcare providers. Also, the attitude of HCP about using labour analgesia was unknown at MNH.

2.2 Practice of Labour Pain Analgesia

In contrast to systemic analgesia, labour analgesia practice uses a multidisciplinary approach, and regional block requires an expert with good experience to achieve. Anesthesiologists typically provide the majority of labour analgesia in India because they are the ones that use regional block technique, and systemic analgesia is typically employed in situations where regional method is not accessible (Narayanappa et al., 2018). In Nigeria, 13.3% of obstetricians regularly administered systemic opioids as labour analgesics mostly pethidine and etazocine hydrochloride (Lawani et al., 2014). Similar results were found in Ethiopia, where 20.3% of health care providers could often administer analgesia to pregnant women in labour, compared to a third of health care providers who never did so. Their main rationales for not administering labour analgesia included a lack of knowledge and technical skills, safety concerns, a lack of equipment or drugs, and financial limitations (McCauley, Stewart and Kebede, 2017, Melesse et al., 2022).

The current practice of labour pain analgesia at Muhimbili National Hospital, is subroutine nevertheless, there is currently scanty data that shows utilization extent of the practice. Despite of recommendations that allow midwifes to provide injectable or regional analgesia as per protocol; continuous support, counseling, directed breathing and relaxation techniques, massage and touch and changing maternal position or moving the mother around which is inconsistently and infrequently provided primarily by the understaffed nurses, are the choices of comforting pregnant woman in the labour ward (MNH-OBGY-SOP Chap.6 page 25; 2019). This study aimed to evaluate knowledge, attitudes, of healthcare providers towards provision of analgesia to a woman in labour at Muhimbili National Hospital.

2.3 Perceived Barriers towards Provision of Labor Analgesia

Majority of healthcare providers are eager to provide labour pain analgesia; however, in developing nations, particularly sub-Saharan Africa, hospital-related factors are the main barrier against the use of labour analgesia. Other barriers include the attitude or beliefs of healthcare providers, subsequently followed by patient-related factors (Lawani et al., 2014, Ouma Gabriel et al., 2022). Health care providers in India were worried about labour analgesia's potential negative consequences on the mother, the baby, and the delivery process. However, despite the fact that these findings are attributed to knowledge and attitude, they indicated that knowledge of labour analgesia does not necessarily translate into the practical application of labour pain analgesia. Similar findings were reported among health care providers in North Central Nigeria which suggested additional obstacles to the provision of labour analgesics. The main barriers to the low practice of labour pain analgesia are hospital and health system related barriers, such as a lack of clear guidelines and protocol, a lack of drugs and equipment, and a lack of sufficient skilled personnel in most of the hospital settings inwich case their presence may facilitate the easier and routine provision of labour analgesia (Akunaeziri *et al.*, 2021, Mousa et al., 2018, Narayanappa et al., 2018).

Healthcare providers in Ethiopia and Egypt mentioned cultural norms, perceived as high costs service, and a lack of knowledge among patients and health care providers about available pain relief alternatives as the most common reasons (Lawani et al., 2014, McCauley, Stewart and Kebede, 2017, Melesse et al., 2022 Mousa et al., 2018, Ouma Gabriel *et al.*, 2022). The barriers identified in sub-Saharan countries may be comparable to those that prevent routine provision of labour pain analgesia in Tanzania, particularly at MNH. Despite of recommendation by MNH Obstetrics and Gynecology guideline (MNH-OBGY Guideline chap.2, page 19; 2019) that pharmacological pain control (i.e. pethidine, morphine, fentanyl and epidural analgesia) should be considered on request during labour yet it is not a common practice, this study aimed to describe perceived barriers related to subroutine provision of analgesia for labour pain and vaginal delivery at MNH.

3.0 METHODOLOGY

3.1 Study Design

The study design was Descriptive Cross section study design.

3.2 Study Area

The study was conducted at MNH in Dar es Salaam region. It involved health care professionals who provide maternity services at Muhimbili National Hospitals -MNH. This was because MNH is a Tertiary and a teaching hospital which offers the highest standard of health care and disseminate downwards to other Institutions. Approximately every year MNH performs around1500 vaginal deliveries (MNH Maternity data base, 2022). MNH has 27 Obstetrics and Gynecology specialist, 47OBGY Residents, 6 Registrars, 14 Intern doctors depending the rotating group and 146 Nurses working in maternity wards. There were 5 Anesthesiologists, 22 Anesthesia Residents, and 45 Anesthetic providers (AMOs, Registrars, and Nurses-anesthetists) which makes a total of 312 study population.

Essentially Obstetricians have the first contact with patients at the ANC or in the wards, giving them the best opportunity to inform patients about the various methods used to administer analgesia for labour pain and direct them toward the analgesics they should choose to lessen labour pain. Obstetricians have the responsibility of prescribing analgesics in accordance with the pregnant woman's preferences, with the cooperation of the anesthesiology department when regional block analgesia is required. However, at MNH, anesthesia providers are not often involved in the labour ward despite the fact that technically they play a significant role in providing labour analgesia, particularly regional blocks; epidurals, and/or spinal, which have satisfactory results for both the mother and the fetus. The nurses in the wards are responsible for counseling and administering prescribed medication to patients, monitor labour progress, and detecting abnormalities in labour process before consulting a doctor on call. Residents, registrars, and intern doctors serve as immediate responders in case of emergency or obstetrics complication.

3.3 Study Population

The participants of this study were Obstetricians and Gynecologists, maternity Nurses, Anesthesia providers, and (Residents, registrars and interns) working in Anesthesiology and Obstetric Departments.

3.4 Sample Size Estimation

Sample size for the study was calculated based on the following formula

$$\text{Sample size (n)} = z^2 p\,(100-p)/\mathcal{E}^2$$

Whereby;

- n = Sample size
- Z = Standard normal values which is 1.96 when p <0.05
- P = Expected proportion of participants who often practice labour analgesia (13.3% from Lawani *et al.*, 2014)
- Ɛ = Absolute error
- Sample size = 1.96^2 x 13.3(100 – 13.3)/ 5^2
- 3.8416*13.3 (86.7)/25
- 4429.787/25

  = 177.19~177

Plus 10% Non-response rate which is 17.7~18 equal to minimum sample size 195.
The study aimed to involve as many participants as possible, the total sample size of the study participant was 202.

3.5 Sampling Procedure

Non probability consecutive sampling where by all eligible participants available at the moment of the study were given a paper based structured self-administered questionnaire to answer the questions from which data were extracted.

Since the study intended to collect data from HCP as many as possible; the final sample size was 202 participants in total. Not all estimated study population of 312 could participate in data

collection the reasons were some of HCP at the time of data collection were on annual leave, and study leave, some were off duty, some on sick leave and dynamicity of temporary workers and on learning programs. The probability proportional to size sampling (PPS) for each designation was calculated using formula (PPS) = ***(ni/N)* n,*** where by "**ni**" is a number of HCP available in each designation at MNH, **"n"** is a sample size (195) and **"N"** is a total number of HCP from all designations (312), therefore **ni/N**=195/312=0.625, thus the sampling fraction was 0.625, and the distribution of probability proportion to size sampling was tabulated accordingly as shown in table 1below.

Table 1: Probability proportion to size sampling distribution of HCP according to their designation at MNH.

Designation	**Number of HCP available to each designation at MNH(*ni*)**	**Probability proportion to size sampling for each designation targeted to participate at MNH**
Midwifes	146	91
Residents	69	43
Anesthetist	45	28
Obstetrician/gynecologist	27	17
Intern doctors	14	9
Registrar	6	4
Anesthesiologist	5	3
Total	312	195

3.6 Inclusion and Exclusion Criteria

3.6.1 Inclusion criteria

All eligible health care providers who have been working at MNH at least for a month.

3.6.2 Exclusion criteria

No exclusion criteria

3.7 Variables

(i) Attitude
(ii) Knowledge
(iii)Practice
(iv) Barriers

3.8 Data Collection Tool

Questionnaire was adapted from previous research of a similar nature with four components the demographic information, knowledge, attitude and practice related barriers of labour analgesia provision (McCauley, Stewart and Kebede, 2017, Mousa et al., 2018, Narayanappa et al., 2018,).

3.9 Data Collection and Procedure

Paper-based structured self-administering questionnaire with closed and open questions was used to collect data after informed consent has been obtained. A pilot study was conducted with a minimum of 10 participants out of study population to determining the clarity of questions and effectiveness of the instructions. Before data collection, appointment with the head of department or block manager was made and agreed day was chosen for data collection. Data collection was conducted in the morning meeting venues where the specific group of health care provider i.e. midwifes, doctors in obstetrics and gynecology department (obstetricians, residents, registrars and interns) and anesthesia providers held their morning meeting on their own places and in different days. During data collection there was a brief sensitization meeting with specific group participants to familiarize to the topic however the briefing was not intend to influence results rather than to sensitize health care providers to participate in the study. There

after all available HCP at the time of data collection who were eligible for the study were provided with questionnaire and required to answer the questions accordingly and the check for proper completions of the questionnaire was done immediately.

3.10 Data Analysis

After data collection, cleaning and coding for age group, knowledge level (good or low) and attitude (good attitude and poor attitude) and practice of analgesia methods was done and fed into SPSS Version 23 Software; analysis to determine knowledge, attitude and to describe how many and how often health care providers at MNH provide analgesia for labour pain and identify potential perceived barriers for labour pain analgesia services was done. Analysis for knowledge was done by Question number 11 (Qn#11) with 8 (A-H) stem sentences and 3 items to choose Yes, No, I don't know, there were 2 items (C and H) which were correct if participant answered "YES" and 6 items (A, B, D, E, F, G) which were correct if participant answered "NO". (McCauley, Stewart and Kebede, 2017, Narayanappa et al., 2018). In these knowledge questions, the correct score was labelled as one (1) and wrong score as zero (0). A participant was classified into Good knowledge category if correctly scored 6 and above stems which is ≥70% or into low knowledge category if scores less than 6 items which is <70% (Melesse *et al.*, 2022). The two by two table was analyzed for each professional category against good and low knowledge

Analysis for attitude was done by Question number twelve (Qn#12) with 12 (i-xii) stem sentences and 5 items of Likert scale (Strongly disagree, Disagree, unsure/neutral Agree, and Strongly Agree) in which a participant was required to choose only one item. The items of the Likert scale was numbered 1-5 from strong disagree to strong agree respectively. Stem number (i, ii, iv, vii, viii, ix,) were correct if participant answered strongly disagree or disagree and the stem number (iii, v, vi, x, xi, xii) were correct if participant answered agreed or strongly agreed. In determining attitude, strongly disagree and disagree combined was scored as one if answered correctly or zero if answered incorrectly, similarly to agree and strongly agree; and if participant selected unsure/neutral was scored as zero. A participants were classified into good attitude group if correctly scored 9 stems and above which is ≥70% or into poor attitude category if

scored less than 9 items which is <70%. There was also analysis in the Likert scale showing response/frequency in each of the five items (Melesse *et al.*, 2022). The two-by-two table were analyzed for each professional category against good and poor attitude.

Analysis for practice were carried out by question number four and five (Qn#4&5). The question number 4 asked if a participant ever provided any form of pain relief to labouring woman and all participants answered the question either Yes or No. Those answered yes were proceeded to next question number 5 which required them to specify the method used to provide pain relief. The question number 5 contained four 4 items that indicated common methods of labour pain management; Non pharmacological, Regional block/local, systemic/injectable analgesia and inhalational analgesia as in this study focused on pharmacological methods only for a participant to be categorized as Practicing labour analgesia should have answered either of the analgesics methods and specify the mode of analgesia, and if participant selected non-pharmacological methods for labour pain management then that was considered as non-practicing labour analgesia participant. The two by two table was analyzed for each professional category against practicing and non-practicing labour analgesia

Analysis to describe the perceived barriers for provision of labour analgesia participants were asked to mention what they perceive as a barrier to them from routine provision of labour pain analgesia at MNH. This objective was analyzed by multiple responses meaning that a participant was allowed to select more than one barriers from the listed barrier and also there was an open ended question which a participant mentioned other barriers apart from the listed ones he/she perceived as obstacle for routine provision of labour pain analgesia. The frequency and percentage computed finally were presented using texts and tables.

3.11 Ethical Consideration

The Senate Research and Publication Committee, the Institutional Review Board (IRB) of MUHAS, granted the study's ethical clearance, and the Teaching, Research, and Consultancy Unit, which reports to the Executive Director of MNH, granted the study's approval.

4.0 RESULTS OF RESEARCH DISSERTATION

Table 2: Characteristics of healthcare provider at Muhimbili National Hospital 2023.

Characteristics	Frequency n (%)
Age group	
≤30	66 (32.7)
31-40	85(42.1)
41-50	34(16.8)
≥51	17(8.4)
Sex	
Female	101(50.0)
Male	101(50.0)
Designation	
Obstetrician/Gynecologist	21(10.4)
Anesthesiologist	4(2.0)
Midwifery/nurse	87(43.1)
Anesthetist	34(16.8)
Registrar	7(3.5)
Resident	29(14.4)
Intern	20(9.9)
Duration of practice	
<5years	78(38.6)
5-10years	58(28.7)
>10years	66(32.7)

Majority 151(74.8%) of the participants were ≤40 years, midwifery and anesthetists were the most designations with large percentage of participants by 43% and 16.8% respectively and more than two-third 136(67.3%) of the HCP were in practice for ≤10 years.

Table 3: Knowledge of healthcare providers about labour pain analgesia at Muhimbili National Hospital 2023.

Designation	Level of Knowledge		Total (%)
	Good knowledge (%)	Low knowledge (%)	
Obstetrician gynecologist	13(61.9)	8(38.1)	21(100)
Anesthesiologist	3(75.0)	1(25)	4(100)
Midwifery/nurse	31(35.6)	56(64.4)	87(100)
Anesthetist	23(67.6)	11(32.4)	34(100)
Registrar	3(42.9)	4(57.1)	7(100)
Residents	9(31.0)	20(69.0)	29(100)
Interns	5(25.0)	15(75.0)	20(100)
Total	87(43.1)	115(56.9)	202(100)

Less than a half 87(43.1%) of the participants had good knowledge towards the use of analgesia for labour pain and vaginal delivery.

Table 4: Attitude of healthcare providers about labour pain analgesia at Muhimbili National Hospital 2023.

Designation	Attitude		Total
	Good attitude (%)	Poor attitude (%)	
Obstetrician gynecologist	10(47.6)	11(52.4)	21(100)
Anesthesiologist	4(100)		4(100)
Midwifery/nurse	20(23.0)	67(77.0)	87(100)
Anesthetist	17(50.0)	17(50.0)	34(100)
Registrar	2(28.6)	5(71.4)	7(100)
Residents	13(44.8)	16(55.2)	29(100)
Interns	8(40.0)	12(60.0)	20(100)
Total	74(36.4)	128(63.4)	202(100)

Less than a half 74(36.4%) of the HCP had good attitude towards the use of analgesia for labour pain and vaginal delivery.

Table 5: Practice of healthcare providers about analgesia for labour pain at Muhimbili National Hospital 2023.

Labour analgesia methods	Frequency n (%)
Non-pharmacological methods	49(62.8)
I/m or iv analgesics	24(30.8)
Regional/Local analgesia	5(6.4)
Total	78(100)

At least 78 (38.6%) of the study population reported to provide pain relief either pharmacological or non-pharmacological ones. Less than a quarter 29 (14.4%) of the participants reported using analgesics for labour pain among them the most common method was injectable (iv/i.m) analgesics 24(82.8%) followed by Regional/local analgesia 5(17.2%). Forty-nine (24.3%) of the HCP reported using non-pharmacological methods as a means of comforting a pregnant woman in labour.

Table 6: Perceived barriers among healthcare providers towards providing analgesia for labour pain at Muhimbili National Hospital 2023.

Perceived barrier	Frequency (%)
Lack of awareness among HCP of available choices for providing analgesia (anti-pain) for labour pain	108 (53.5)
Lack of knowledge on how to provide labour analgesia	118(58.4)
Absence of clear guideline and protocol govern the provision of analgesia for labour pain and vaginal delivery	175(86.6)
Unavailability of clear cost for labour analgesia service	65(32.2)
Unavailability of equipment/devices to monitor labour progression	66(32.7)
Lack of inter-professional or Interdepartmental collaboration in providing routine labour pain analgesia	78(38.6)
Unavailability of equipment to administer analgesia for labour pain	62(30.7)
Others(interference with labour, preference to traditions, fear of fetal distress, not established, no ANC for labour pain analgesia)	21(10.39)

Most of the study participants 175(86.6%) reported that "absence of clear guideline and protocol" that govern provision of labour pain analgesia, "lack of technique &knowledge" to administer analgesics 118(58.4%) and unawareness of HCP 108(53.5%) on available choices of labour pain analgesics were the most perceived practice related barrier for HCP to deliver the service.

5.0 DISCUSSION

Knowledge

The evaluation was on basic knowledge about analgesia for labour pain based on labour progression, comfortability of a pregnant woman during labour and vaginal delivery, complications and the fetal outcomes. The most knowledgeable designation professionals were anesthesiologists, anesthetist and obstetricians/Gynecologist. Complications of labour like increased cesarean section rate, assisted/instrumental vaginal deliveries, or lengthening of labour, low Apgar score were mostly considered by participants as common outcomes to pregnant women when using analgesia which differs from the findings in India that showed no effect on the progression of labour and outcome of the newborn when using analgesia specifically epidural block (Narayanappa *et al.*, 2018).

Despite of comprising a significant percentage of workforce in obstetrics particularly in labour ward, majority of midwifes, residents and intern doctors had low level of knowledge on labour analgesia which might affect standard obstetric care to a pregnant woman in labour. In this regard, the healthcare providers especially residents, interns and midwife need to be training about analgesia for labour pain.

Attitude

Approximately one third 74(36.4%) of the participants had good attitude towards the use of analgesia for labour pain and vaginal delivery based on pain perception, intervention of labour pain with analgesia, comfortability of delivering woman while on analgesia and readiness of health care provider to service labour pain analgesia. Some of the participants considered labour pain is a natural process so should not be intervened pharmacologically, pain relief is not a priority to delivering woman and analgesia for labour pain is related to future back pain which differ from the findings in Ethiopia and Nigeria where more than two-third of health care provider agreed that labour pain analgesia would give delivering women good experience (Lawani *et al.*, 2014, McCauley, Stewart and Kebede, 2017, Mousa *et al.*, 2018). However;

majority of the healthcare provider agreed to provide labour pain analgesia when the service is available.

Low percentage of participants with good attitude towards labour pain analgesia especially to midwifes, interns and residents should be taken into consideration for training staffs who mostly provide care and close monitoring to a woman in labour at Muhimbili Ntional Hospital as recommended by WHO.

Practice

In this study only participants who used medication i.e. injectable analgesics or regional analgesics to relief labour pain were considered practicing labour pain analgesia. Less than a quarter 29(14.4%) of participants were practicing labour pain analgesia mostly systemic injectable analgesia 24(82.8%) i.e. Pethidine, diclofenac, paracetamol and the rest was regional/local analgesia by bupivacaine. Majority of the HCP gave injectable analgesia or regional/local analgesia inconsistently (sometimes) and those who gave pain relief under request from a pregnant woman were fewest which is contrary to MNH-OBGY guideline chap.2 pag19 that recommend consideration of pharmacological analgesics under request.

The findings did not differ from previous studies done in Nigeria and Ethiopia where by 13% and 20.3% of HCP were practicing labour analgesia and the most common method was systemic analgesia compared to regional analgesia which requires expert like anesthesiologists with good experience to provide good quality and satisfactory analgesia (Lawani et a, Narayanappa et al., 2018). The low number of HCP who practice labour pain analgesia at MNH indicates that the service is far from reaching standard obstetrics care which WHO, ACOG recommend.

A total of 49(24.3%) of the participants reported using non-pharmacological methods as a means to alleviate pain during labour and vagina delivery and the most common methods mentioned were back massage, counselling, breathing technique, psychological support/partner support and loving words from partner or HCP which normally done inadequately and less frequent duet to several reasons including shortage of staffs. Despite of having standard operating procedure (OBGY-SOP Chap.6 page 25; 2019) that allow midwifes to provide injectable and regional analgesia as per protocol, majority of HCP reported to do it inconsistency/sometimes among the

reasons of not proving according is the medication is not prescribed and lack of clear guideline that provide precisely how to provide labour pain analgesia. This shows that labour pain analgesia need more attention for it to be in routine care at MNH.

Perceived barriers

Lack of knowledge/ awareness among HCP on choices of labour pain analgesia reflected in the study as well as majority having poor attitude towards labour pain analgesia might have contributed to the obstacles preventing provision of routine labour pain analgesia. Despite of recommendation by MNH-Obstetrics and Gynecology guideline (MNH-OBGY Guideline chap.2, page 19; 2019) that pharmacological pain control (i.e. pethidine, morphine, fentanyl and epidural analgesia) should be considered on request by pregnant woman during labour, nearly nighty percent of study participants yet responded that lack of clear guideline and protocol is a major perceived barrier for them to provide routine labour pain analgesia.

Unavailability of equipment to administer analgesics, devices to monitor labour progression and clear cost of the service were less pointed as major perceived practice related barriers for providing labour pain analgesia by most participants. Similarly; inter-professional or interdepartmental collaboration was a least mentioned by majority as an obstacle to HCP to delivery labour pain analgesia. Fear of cost, lack of ANC for labour pain analgesia, lack of awareness among HCP on available choices of labour pain analgesia, interference of labour progression and negative consequences of labour like fetal distress were other perceived practice related barrier mentioned by some of HCP as the reasons for them not to provide labour pain analgesia often. The current findings does not differ from previous studies which indicated that most of HCP in sub-Saharan Africa are willing to provide labour pain analgesia but pinned out that institution related barriers to include lack of guideline and policy are the leading perceived obstacles followed by the attitude or beliefs of healthcare providers, and lastly by patient-related factors (Lawani et al., 2014, Ouma Gabriel et al., 2022).

One of the significant findings in this study was on attitude when asked their willingness to provide routine labour pain analgesia when available; more that 80% of HCP responded positively agreed that they would provide if the service is available the findings does not differ

from the previous studies which showed majority of healthcare providers are eager to provide labour pain analgesia (Akunaeziri *et al.*, 2021, Mousa et al., 2018).

In this regards it is essentially important for institution to improve the obstetrics services especially the management of labour pain as per WHO and ACOG recommendations and this can be done by eliminating barriers mentioned in the study by HCP at Muhimbili National Hospital.

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Less than half of participants have good knowledge and attitude to provide labour pain analgesia and majority of the healthcare provider do not routine provide analgesia for labour pain. Lack of Clear guideline & protocol and knowledge are main perceived barriers of healthcare provider to provide analgesia for labour pain at Muhimbili National Hospital.

6.2 Recommendation

1. There is a need to train Healthcare provider at Muhimbili National Hospital especially midwifes, residents, registrars and interns' doctors on labour pain analgesia.
2. There should be a clear guideline, protocol that govern how to provide analgesics for labour pain.
3. Healthcare provider should expose pregnant women on the choices available to relief labour pain during Antenatal clinic.
4. There is a need of further study with qualitative method on practice and barriers for routine provision of analgesia for labour pain at Muhimbili National Hospital.

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APPENDICES

Appendix 1: Questionnaire

MUHIMBILI UNIVERSITY OF HEALTHY AND ALLIED SCIENCES

SCHOOL OF CLINICAL MEDICINE

DEPARTMENT OF OBSTETRICS AND GYNACOLOGY

KNOWLEDGE, ATTITUDE, AND PERCEIVED PRACTICE RELATED BARRIERS AMONG HEALTHCARE PROVIDERS TOWARDS THE USE OF ANALGESIA FOR LABOUR PAIN AND VAGINAL DELIVERY AT MUHIMBILI NATIONAL HOSPITAL

RESEARCH TOOL.

ID……..

Part I: Demographic data

Qn#1.Gender

1. Female 2.Male

Qn#2.Designation:

i. Obstetrician/Gynecologist

ii. Anesthesiologist

iii. Midwifery

iv. Anesthetist

v. Registrar

vi. Resident

vii. Intern

Qn#3.Duration of practice

i. <5years ii 5– 10 years iii >10 years

PART II: Practice

Qn#4. Do you ever provided any form of pain relief to a woman in labour?

1. Yes 2. No (***If No, go to Qn#7)***

Qn#5. What type of analgesia do you provide to a woman in Labour?

1. Non-Pharmacological Methods **(*Specify*……)**

2. Systemic Analgesia (***Specify***……...)

3. Regional/Local Analgesia (***Specify***……..)

4. Inhalation analgesia (***Specify*……..*)**

Qn# 6. How often do you practice the method you have mentioned in Qn#5 above to a woman in labour?

i. Routine ii. Sometimes iii. When requested by pregnant woman iv. Rare

Qn#7. What are the barriers that prevent you to provide routine analgesia for labour pain and vaginal delivery to a woman at MNH? (*Please tick one or more that apply*)

Item	**Variable**	**PUT MAR(v)**
A	Lack of Awareness of healthcare providers on choices of analgesia (anti-pain) for labour pain	
B	Lack of Technique and knowledge of medical professional on how to provide labour analgesia	
C	Unavailability of clear guideline and protocol to provide analgesia for labour pain and vaginal delivery	
D	Unavailability of clear cost for labour analgesia service	
E	Unavailability of equipment/devices to monitor labour progression	
F	Lack of Interdepartmental involvement in decision making	
G	Unavailability of equipment to administer analgesia for labour pain	

Mention other reasons for you not to provide routine analgesia for labour pain ……

……

……

Qn#8. What could have been done for you to provide routine analgesia for labour pain and vaginal delivery to a woman at MNH? (*Mention)*

……

……

……

……

PART III: Knowledge

Qn#9. **What level of pain would you expect a woman to experience during labour and vaginal delivery?**

i. Mild ii. Moderate iii. Severe iv. Extreme severe

Qn#10. Table.01.Tick to one response either YES, I DON'T KNOW or NO

Item letter	**Variable**	**YES**	**I DON'T KNOW**	**NO**
A	Analgesia use during labour and vaginal delivery makes labour longer			
B	Analgesia use during labour and vaginal delivery makes patient loss control			
C	Analgesia use during labour and vaginal delivery does not stop contractions			
D	Analgesia use during labour and vaginal delivery affects the mother's ability to push			
E	Analgesia use during labour and vaginal delivery increases vacuum delivery or instrumentation delivery			
F	Analgesia use during labour and vaginal delivery increases Caesarean section rate			
G	Analgesia use during labour affects the baby's breathing			
H	Analgesia use during labour does not affect breast feeding			

PARTIV: Attitude

Qn#11. (*Tick to one response only)*

Item	Variable	Strongly disagree	Disagree	Unsure/Neutral	Agree	Strongly agree
(i)	Women should experience pain during labour					
(ii)	Do you believe that pain relief in labour is not necessary					
(iii)	Use of pharmacological pain-relief methods does not influence the progress of labour					
(iv)	Use of pharmacological pain-relief methods does not increase comfort of women					
(v)	If resources are available and you have been asked to give pain relief during labour, do you agree to give them?					
(vi)	Would you Continuously provide					

	education that focuses on methods for pain relief during labour and vaginal delivery?					
(vii)	Labour pain is a natural process, should not be intervened pharmacologically					
(viii)	Pain relief is not a priority for labouring mothers					
(ix)	Analgesia use during labour relate with low Apgar Score					
(x)	Analgesia use during labour is not associated with Future backache/back pain					
(xi)	Maternal request is an indication for labour pain analgesia provision					
(xii)	The role of health care provider is to educate and guide a pregnant women on the choice of analgesia during labour					

Appendix 2: Consent Form (English Version)

MUHIMBILI UNIVERSITY OF HEALTHY AND ALLIED SCIENCES

SCHOOL OF CLINICAL MEDICINE

DEPARTMENT OF OBSTETRICS AND GYNACOLOGY

CONSENT FORM FOR ENROLLMENT IN THE STUDY:

Informed consent form (English version)

ID-NO……

Study tittle: KNOWLEDGE, ATTITUDE, AND PRACTICE RELATED BARRIERS AMONG HEALTHCARE PROVIDERS TOWARDS THE USE OF ANALGESIA FOR LABOUR PAIN AND VAGINAL DELIVERY AT MUHIMBILI NATIONAL HOSPITAL.

Introduction:

Greetings;

I'm Dr. Franco S Henjewele, postgraduate student pursuing masters of medicine in obstetrics and gynecology at Muhimbili University of Health and Allied Sciences-MUHAS. I'm conducting study to assess knowledge, attitude, and practice related barriers among healthcare providers towards the use of analgesia for labour pain and vaginal delivery at Muhimbili National Hospital –MNH.

Purpose of the Study

The purpose of the study is to assess knowledge, attitude, and practice related facilitators and barriers of using analgesia for labour pain and vaginal delivery among health care providers at Muhimbili National Hospital

Participation

Participation in this study is voluntary and free, If agree to participate in the study, you will be asked questions whereby the information from your answers will help us accomplish the purpose of the study

Risks

Usually no harm is expected among our participants from this study

Benefits

The results of this study may give light to improve services especially for labour pain management for vaginally delivering woman at MNH. Therefore, as a health care provider at this Tertiary hospital, I would like to request you to participate in this study in so doing it turns out to be among your contribution to the health system and MNH-Management for improving hospital services at MNH.

Voluntariness

Participation in this study is voluntary. You have a choice to whether participate or not, and you are allowed to stop your participation in this study at any point. In case, you have decide not to proceed with the study, please you can inform researcher and may remove you from the study if there is a good reason to do so for your own benefits.

Confidentiality:

All information gathered during this study will be kept confidential to the best of our ability. Your name, personal identification or participation number will be kept confidential and will not appear in any report. Only researcher who are involved in this study will have access with your information, data generated and published will remove all linked information to information that can lead to your identification.

Compensation:

There will be no compensation for your participation in this study.

Contact Information:

For further communication: contact: Principal Researcher, Dr. Franco Hnjewele-0762296671 or Email: franco.henjewele@gmal.com

OR

Supervisor, Dr. Matilda Ngarina 0713406267 or Email. mmatty71@gmail.com and Dr. Zainab H. Yussuph –phone# 0757457588 email. naika.zain@gmail.com

Participation Agreement

I…….. Have read this consent form, and understood the purpose of this study, and agreed to join the study. I agree to participate in this study.

Date…….. Signature…….

I confirm that all required information of this study were explained to the participant

Date……. Signature ……..

Appendix 3: Ethical Clearance Letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/ 1947

Date: 17/10/2023

MUHAS-REC-10-2023-1947
FRANCO S. HENJEWELE
COLLEGE OF MEDICINE MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: KNOWLEDGE, ATTITUDE AND PRACTICE RELATED FACILITATORS AND BARRIES AMONG HEALTHCARE PROVIDERS TOWARDS THE USE OF ANALGESIA FOR LABOUR PAIN AND VAGINAL DELIVERY AT MUHIMBILI NATIONAL HOSPITAL

Reference is made to the above heading,

I am pleased to inform you that the Chairperson has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 17/10/2023
EXPIRATION DATE OF APPROVAL: 17/10/2024

STUDY DESCRIPTION:
Purpose:

The purpose of this cross-sectional study design is to assess the healthcare provider's knowledge, attitude and practice related facilitators and barriers regarding the use of analgesia for labour pain and vaginal delivery at Muhimbili National Hospital.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided:
https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014801.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country,
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

Dr. Doreen Kamori.

Ag. Chairperson, MUHAS Research and Ethics Committee

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research, Publications & Innovations
Box 65001

appendix 4: Introduction Letter

UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.124/2021

23rd October, 2023

The Executive Director,
Muhimbili National Hospital,
P.O. Box 65001,
DAR ES SALAAM

Re: INTRODUCTION LETTER

We would like to inform you that the bearer of this letter is Franco S. Henjewele with Reg. No. HD/MUH/T.124/2021 is a student at Muhimbili University of Health and Allied Sciences (MUHAS) "pursuing MMed. Obstetrics/Gynaecology.

As part of his studies, he will be doing an elective research titled: "**Knowledge, Attitude and Practice Related Facilitators and Barriers Among Healthcare Providers Towards the Use of Analgesia for Labour Pain and Vaginal Delivery at Muhimbili National Hospital.**" he is being supervised by Dr. Matilda Ngarina from MNH and Dr. Zainab Yusuf from MUHAS.

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

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.

Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

c.c Franco S. Henjewele

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz

appendix 6 Permission Letter

THE UNITED REPUBLIC OF TANZANI

MINISTRY OF HEALTH

MUHIMBILI NATIONAL HOSPITAL

Ref. No.: MNH/CRTCU/Perm/2023/542 Date: 30th October 2023

Head of Department
- Obstetrics and Gynaecology
- Anaesthesia

Block Manager
Maternity – I
Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH.

Name of Student	**Franco S. Henjewele**
Title	**"Knowledge, Attitude and Practice Related Facilitators and Barriers Among healthcare Providers Towards the Use of Analgesia for Labour Pain and Vaginal Delivery at Muhimbili National Hospital".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Dr. Zainab Yusuf (MUHAS)
Co – Supervisors	Dr. Matilda Ngarina (MNH)
Period	27th October, 2023 to 30th January, 2024

Approval has been granted to the above principal investigators to collect data at MNH. Dissemination of study findings at MNH shall be overseen by **Dr. Matilda Ngarina** (MNH) supervisor.

Kindly ensure the named principal investigator abide to the ethical princip... and other conditions of the research approval.

Sincerely,

HEAD, TEACHING, RESEARCH & CONSULTANCY UNIT
P. O. Box 65000
DAR-ES-SALAAM
MUHIMBILI NATIONAL HOSPITAL

Dr. Jessie Mbwambo
Head of Clinical Research, Training and Consultancy Unit

c.c DSS, DNMS
c.c Dr. Matilda Ngarina
c.c **Franco S. Henjewele**

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