NURSES PRACTICES AND EXPERIENCES OF PROVIDING ORAL CARE TO CRITICALLY ILL PATIENTS AT INTENSIVE CARE UNIT, MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM, TANZANIA.

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Nurses Practices and Experiences of Providing Oral Care to Critically Ill Patients at Intensive Care Unit, Muhimbili National Hospital, Dar Es Salaam, Tanzania.

By

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Dissertation Submitted in (Partial) Fulfillment of the Requirement for Degree of Master of Science in Nursing (Critical Care and Trauma) of Muhimbili University of Health and Allied Sciences

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CERTIFICATION.

The undersigned certify that they have read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation entitled **"Nurses Practices and Experiences of Providing Oral Care to Critically Ill Patients at Intensive Care Unit, Muhimbili National Hospital, Dar Es Salaam, Tanzania"** in partial fulfillment of the requirements for the degree of Master of Science in Nursing (Critical Care and Trauma) of Muhimbili University of Health and Allied Sciences.

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Date

DECLARATION AND COPYRIGHT.

I, **Agness Lazaro Lazier,** declare that this dissertation/thesis entitled is my original work and 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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DEDICATION

This dissertation is dedicated to all nurses caring for critically ill patients.

ABSTRACT

Background of the study: Oral care is a vital procedure for critically ill patients in the Intensive Care Unit (ICU) to promote oral hygiene that decreases microbial colonization in the oropharynx and dental plaque as well as reduce aspiration of contaminated saliva. Despite available evidence of significant oral care to critically ill patients, ICU nurses' knowledge of oral care does not reflect their practice. Nevertheless, there are high mortality rates attributable to the complication of poor oral hygiene in Tanzania for patients admitted to ICU in the tertiary referral hospitals.

Objective: This study aimed to explore nurse practices and experiences of providing oral care to critically ill patients at the intensive care unit, Muhimbili National Hospital, Dar Es Salaam, Tanzania

Materials and methods: An explorative descriptive qualitative design was employed to 18 registered nurses from medical ICU at Muhimbili National Hospital. An in-depth interview guide with open ended question was used to collect data from registered who were recruited purposively for an interview. To complement the interview, eighteen observations were conducted to the same participants to observe nurses' practice regarding oral care to critically ill patients. Thematic analysis using the deductive approach was performed by using pre-set thematic questions to guide analysis**.**

Results: Three themes emerged from the analysis of interview. "Oral care as nursing intervention in ICU patient" emerged as a theme describing key nursing intervention in provision of oral care to critically ill patient. Also, "prevention of potential risk of complication from oral disease and improve patient well-being" this theme indicates implication of oral care to critically ill patient. Lastly was the "Limiting factor for good oral care practice in ICU" this theme describes the obstacles or barrier faced by nurses when providing oral care to critically ill patients.

Conclusion: The study highlighted the most important and unique experiences of providing oral care to critically ill patients. Besides, nurses face some of the barrier when practice oral care to critically ill patient. Therefore, finding revealed crucial role especially a nursing intervention on preventing oral diseases to improve quality of life among critically ill patients at MNH.

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ABBREVIATIONS

AACN	American Association of Critical Care Nurse
ICU	Intensive Care Unit
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Health and Allied Science
RA	Research Assistant
UK	United Kingdom
USA	United State of America
VAP	Ventilator-Associated Pneumonia

DEFINITIONS OF TERMINOLOGY

Experience: is knowledge or skill in a particular job or activity that nurses have gained because nurses have done that job or activity for a long time or the past events, knowledge, and feelings that makeup someone's life or character but also it can be something that nurses do or that happens to nurses, especially something important that affects nurses (1).

Nursing care: refers to procedures or medications which are solely or primarily aimed at providing comfort to a patient or alleviating that person's pain, symptoms of distress, and include the offer of oral nutrition and hydration.

Oral care: refer to oral health service provided to maintain oral hygiene to prevent oral disease.

Oral health: is the absence of disease and the optimal functioning of the mouth and its tissues which include the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence (2).

Oral hygiene: means care of teeth, and brushing steps, the importance of dental checkup and dietary management

Perception: refer to the process of utilizes sensory and cognitive processes to understanding phenomena by interpreting information based on experience and forming a mental model.

Practices: is defined as to use an idea or put it into place but also it refers to the act of continually doing something to get better at it.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the study

Oral care in critical care setting is considered a basic aspect of nursing care for improving patient condition among critically ill patient. These patients are dependent on nursing staff for personal and oral care activities (3). Moreover, oral care interventions are important and should be provided for all patients in ICU especially those on mechanical ventilation to clean and moisten the respiratory tract to prevent hospital-acquired infections, particularly ventilator-associated pneumonia (VAP) (4). Therefore, provision of oral care is the basic nursing practice for promoting health and comfort among critically ill patients in the ICU.

Provision of an effective oral hygiene in ICU may be challenging due to medical conditions for a critically ill patient, treatment, equipment, and the consciousness level of the patient (5). Also, mouth contains normal flora; hence any alteration in oral enzymes of a critically ill patient causes the normal flora to change to pathogens capable of causing pneumonia within 48 hours (5–7). The accumulation of oral microorganisms and reduction in saliva also leads to persistent adherence to a biofilm on the teeth, commonly known as dental plaque (8). Therefore, its serves as a reservoir for the growth of microorganisms when oral care is inadequate or not practiced at all and dental plaque increases the risk of VAP in severely ill patients (5).

Moreover, any change and reduction in salivary production leads to a decrease in normal flora in the mouth and creates a media for the growth of bacteria (9). This highlight the need to implement a comprehensive oral care program among patients in the medical ICU decreased the rate of VAP (5,10). Then a comprehensive oral care may include removal of the biofilms by cleaning, debriding, suctioning, and moisturizing the oral cavity (4).

Despite, the American Association of Critical-Care Nurses (AACN) for patients in Critical Care Units and acute care settings recommend that teeth, gums, and tongue be brushed at least twice a day using a pediatric or soft toothbrush to remove plaque, and moisturizer is added to oral mucosa and lips every 2 to 4 hours (11). Furthermore, AACN guideline recommended assessment to oral cavity and lips should be done every 8 hours for a build-up of dental plaque and the potential for infection related to oral abscesses (12). Then, oral care practice to critically ill patient ware rarely take it seriously and are always given low priority among nurses in critical care setting (13). Moreover, this have been associated with some of

challenges like poor knowledge, attitude, and practices towards oral care in a hospital setting (14).

Equally important, nurses perceived oral care as not vital care and are always considered optional. Similarly, nurses who do not have enough time to perform oral care believe that providing oral care to patients is an unpleasant experience or task and has an indirect effect on the quality of oral care given to patients (15). Nurses need to get more training to become aware and realize the benefit of oral care to hospitalized patients (16). Additionally, a study from Rwanda suggested the need to educate ICU nurses in the area of oral care to increase the quality of care; because most of them lack recognition of oral care in preventing a nosocomial infection (17). This can be attributed to the limited knowledge and practical skills on oral care among ICU nurses which motivate the researcher to nurse practices and experiences of providing oral care to critically ill patients at intensive care unit.

1.2 Problem statement

Inadequate oral hygiene is one of the common risk factors for periodontitis disease. A periodontitis prevalent was found to be 40% globally and 64.7% of adults in developed country like United State (18–20). In a low and middle-income country like Tanzania, the dental plaque has been reported to be prevalent among adolescents and adults and it is estimated that, on average, at the age of 40 to 49 years, each Tanzanian has lost at least one tooth because of advanced periodontal disease, and after the age of 50, the problem becomes more marked (21). Likewise, poor oral practice maximizes dental plaque formation and accumulation of oropharyngeal debris. Therefore it created an ideal environment for pathogenic micro-organisms which was associated with the occurrence of Ventilated associated pneumonia (VAP) for about 9% to 27% of all intubated ICU patients (22).

However, pneumonia infection often prolongs hospital stays, increase patient care cost, and causes an increase of morbidity and mortality for the critically ill patient (13). Then it is the nurse's responsibility and accountability to provide oral care to critically ill patients in ICU because oral hygiene has a great impact on critically ill patients since it reduces hospitalization, mobility, and mortality (23). Studies in Tanzania documented limitations that impair nurses' ability on providing optimal care to critically ill patient, including inadequate infrastructure, personnel, resources, and inability of translating knowledge into practice (24,25). Not to mention, most of existing literature does not explain sufficient knowledge to understand nurses' experienced when providing oral care to critically ill patients. Hence this

study aims to explored Nurses practices and experiences of providing oral care to critically ill patients at the intensive care unit, Muhimbili national hospital, Dar es salaam, Tanzania

1.3 The rationale of the study

The findings of the study are expected to be used to generate the baseline information on additional knowledge about perceived challenges related to oral care practice for critically ill patients among healthcare providers especially ICU nurses. The knowledge provides highlight to various areas for improving Nurse's competence and experience. Also added knowledge pointed nursing practices to be considered in a nursing education and training focusing assessment of oral care to critically ill patent in various levels of the education system.

Also, study finding is expected to provide evidence-based advice to inform healthcare providers and decision-makers who are responsible for the improvement of nursing practice on the formulation of the standardized guideline, protocol, or policy on oral care to critically ill patients. Also, the study finding provided basic information to the organization for developing strategies to address challenges for applying appropriate intervention to particular practices highlighted for improvement of quality of oral care to be delivered to prevent adverse events to critically patients.

1.4 Overall research question.

What are the ICU nurses' practice and experiences of providing oral care to critically ill patients at Muhimbili National Hospital?

1.5 Research questions

i. What are the ICU nurses' practices in the provision of oral care to critically ill patients at Muhimbili National Hospital?
ii. What is the ICU Nurses' experience of providing oral care to critically ill patients at Muhimbili National Hospital?
iii. What are the ICU nurses' barriers in the provision of oral care to critically ill patients at Muhimbili National Hospital?

1.6 Broad objective

The broad objective of the study was to explore the ICU nurses' practices and experiences of providing oral care to critically ill patients at Muhimbili National Hospital.

1.7 Specific objectives

i. To describe the ICU nurse's practices in providing oral care to critically ill patients at Muhimbili National Hospital?
ii. To describe the ICU Nurse's experience of providing oral care to critically ill patients at Muhimbili National Hospital?
iii. To explore the ICU nurses' barriers in the provision of oral care to critically ill patients at Muhimbili National Hospital?

1.8 Conceptual framework

The study was guided by Orem's Self-Care Deficit theory developed by Doretha E. Orem in 1990 which is the basic element of Orem's general theory of nursing to construct the conceptual framework for this study (26). The theory was adopted to construct a conceptual framework based on its applicability in describing the contribution of nursing practice and in the development of nursing technologies and education (27).

Nursing care is needed when adults are incapable of or limited inability to perform effective self-care on their own. When the self-care abilities are less than those required for meeting self-care demand, the nursing agency takes the role of meeting the self-care need. The nursing agency helps the individual to incorporate newly prescribed, complex self-care measures into their self-care systems or to recover from disease or injury, which requires specialized knowledge and skills. Orem identified five methods by which the nursing agency helps the individual to meet their self-care needs, acting for or doing for another, guiding and directing, providing physical or psychological support, providing and maintaining an environment that supports personal development and teaching. The nurse designs the nursing system based on an individual’s self-care needs and his ability to perform the self-care. Whenever there is a lack of an individual’s ability to do self-care, a self-care deficit exists and the need for nursing arises.

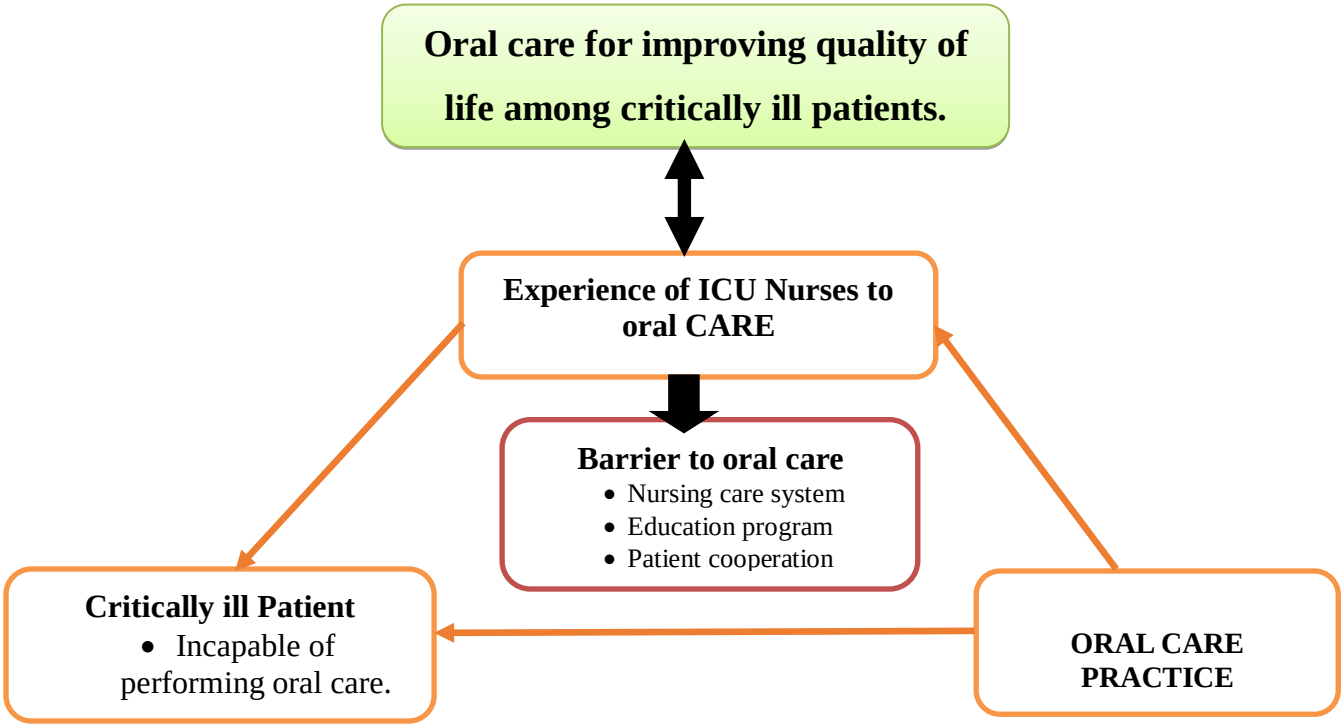

Figure 1: A modified conceptual framework for perceived barriers and experiences of intensive care unit nurses on oral care practices to critically patients.

Operationalization of the conceptual framework of the study.

Oral care to the critically ill patient (dependent variable) depends on the ICU nurses' experience, and practices in providing oral care to critically ill patent (independent variable). Although, critically ill patients are highly dependent on oral care practice provided by ICU nurses to promote and maintain well-being throughout life. Therefore, the provision of oral care to critically ill patients should be performed by knowledgeable ICU nurses because it is comprised of various practical skills that should be performed by specialized and trained nurses available at the intensive care unit.

The experience of ICU nurses in providing oral care to critically ill patients is influenced by the process of translating practical skills regarding oral care among ICU nurses. However, the translation process may be affected by various challenges such as the nursing care system education program and patient cooperation. Then, those challenges act as the barrier for ICU nurses in performing oral care practice into the experience

The oral care acts by three systems namely wholly compensatory, whereby in this regards ICU nurses are responsible to provide effective oral care to the critically ill patient to improve the health condition of the patient admitted at the ICU (28).

Therefore, the researcher used this framework to explore the perceived challenges and experiences of ICU nurses on the provision of oral care to critically ill patients. Moreover, it guided the researcher to formulate the objectives, literature review, analyzing data including presentation and discussion of the study result.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 ICU nurse's practices on the provision of oral care to critically ill patients.

A recent study reported nurses who practiced a mouth care twice per day were (61%), lower than those who practiced five times (72%) in the USA (29). Moreover, study pointed the need for setting of ICU protocols to guide provision of oral care to critically ill patient. Furthermore, absence of formal protocol resulted to material discrepancy used for mouth care within and between countries. Studies demonstrated that, in Sudan, saline is used by 98.1% of nurses and mouth wash by 29.2% of them, while in Israel mouth wash was used by 75% of the nurses. Chlorhexidine products were routinely used by 58.5% in the UK and 81.9% in the USA (30–32). Moreover, previous study by Ganz et al., (2009) conducted in Jerusalem, Israel showed that nurses commonly used gauze pads (84%), tongue depressors (55%), and toothbrushes (34%) to perform oral care while the most common solution used (75%) were chlorhexidine (14). Therefore, this affect nursing practice on the provision of oral care.

Numerous aspects should be involved when practices oral care to critically ill patient. A selecting of best technique for oral hygiene and environment influence nurses on performing oral care to improve patient wellbeing and ward organization. A study finding revealed that brushing techniques can be ineffective and it is also possible that patient choose to use alternative methods of cleansing instead of brushing (33). Then, there is a need to perform oral assessment prior to the performing of oral care to critically ill patient.

Additionally, oral care assessment should be done before beginning oral care. Oral care assessment of dental health including the condition of the teeth, gums, tongue, mucous membranes and lips and barriers to mouth care delivery e.g. oropharyngeal tubes. (34). Therefore, assessment should be delivered to critically ill patient to decrease the prevalence of nosocomial pneumonia

Effective oral care practice among nurses in a critical care setting increases the patient outcome. A study finding shows more than half (50%) of nurse had had 100% accuracy of practice, followed by 42.9% of nurses had 90% to 99% of the accuracy of practice and 7.1% of nurses had 88% of the accuracy of practice. Moreover, study identify there were improvement of patient oral health after receiving oral care based to guideline (31). Therefore, finding implies that majority of nurses correctly performing basic element for delivering oral care to critically ill patent including oral assessment, preparation, oral care, patient monitoring, oral reassessment, and documentation.

However, studies in Tanzania are scarce, but finding from previous study indicated poor practiced on prevention of VAP was associated with having good knowledge on VAP in a particular education level. For instance majority of there is poor maintenance of environment and equipment cleanness (25). Regarding practice on VAP it implies that nurses failed to translate knowledge into practice for prevention of oral disease to critically ill patients. Therefore, this impaired experience among ICU nurses concerning the practice of oral care to critically ill patients are due to a lack of regular training in the working environment.

2.2 ICU Nurses' experience of providing oral care to critically ill patients.

Moral experience is considered a moral work which motivate nurses on providing oral care to critically ill patients (33). A study by Lee et al., (2019) showed that nurses (84.9%) working in general wards were more likely not to report not providing oral health care than those working in the ICU (35). This implies that majority of nurse in the general ward recognized the importance of oral health care for hospitalized patients.

Based on the finding of the study by study by Alotaibi et al., (2016) conducted in Saudi Arabia it can be stated that difficult to clean oral cavity was due to its anatomic structure by most ICU nurses (36). Then, Harmon and Grech, (2020) in Australia established that nurses underestimated the provision of oral care to unstable patients (37). Therefore, this suggests that new techniques and/or instruments, training are needed to improve the experience of nurses on providing oral care for mechanically ventilated patients.

A study conducted at the University of Gondar comprehensive specialized hospital in Ethiopia found that nurses had inadequate knowledge whereby the provision of training will enhance nurses' experience and practices for improving the quality of oral care to critically ill patients (38). Conversely, more than half of nurses had good information about oral hygiene and it was shown by the majority of nurses could perform an oral assessment to identify risk factors of poor oral care (39). Therefore, nurses who have educational resources for mouth care have better information about oral care and can provide mouth hygiene to critical patients regularly (5).

At the same line Ibrahim, Mudawi and Omer, (2015) established that a working experience in an ICU had no significant relation with the practice of oral care while on the other hand, in Ethiopia it was reported the more the experienced the more knowledge and practice of oral care to prevent VAP (29). Besides, Nurse who had insufficient experience in performing oral care to an intubated patient, they were not familiar with an intubated patient at the ICU which requires different skills and knowledge compared to other patients. Furthermore, a study in

Rwanda emphasizes that ICU Nurses should be provided with regular in-service training to encourage as well as to updated nurse's knowledge and skills despite their working experience for improving oral care practice in preventing VAP among patients (40).

In Tanzania, a study by Said, (2012) discovered that ICU nurse's knowledge on VAP prevention was adequate but their practice was found to be poor. Therefore, the study recommended motivation of opinion leaders amongst nurses in the units should be done to promote their colleagues in putting VAP guidelines into practice (25). Also, learning resources such as articles, journals, and electronic resources such as computers and the internet should be made accessible in the units for staff members to improve their knowledge.

2.3 ICU nurse's barriers on care for the critically ill patients

The barrier to effective oral care can be grouped into three categories. First is the knowledge gap means; gap exists between evidence and practice. Since many nurses failed to link oral health and systemic infections because the topic is inadequately covered in nursing education. Secondly, Patient barriers which include restricted access to the oral cavity because of the endotracheal tube and fear of dislodging the tube, provoking aspiration, or causing discomfort among intubate patient, as well as the uncooperative patient. Lastly, it is the system barriers includes demanding workload, high patient acuity, time constraints, insufficient staffing levels, higher patient-nurse ratios, absence of hospital oral care protocols, and lack of supplies and also an oral care educational program to address the barrier and improve the quality of oral care delivered (6).

Charalambous *et al*.,(2020) conducted in Cyprus on nurse's views and practice about oral care reported that a reason for patients not to comply with oral care is patient severity from either ventilated, patient with cancer, or mental illness (41). Moreover, a lot of writing tasks, low staffing, and different practices were the major barriers to oral care. A quantitative study conducted in Ethiopia revealed that uncooperative patients, inadequate staff, fear of tube displacement, lack of oral care requisites, unpleasant tasks, and lack of knowledge were among the barriers mentioned by ICU nurses on performing oral care to the critically ill patient (42). On the other hand lack of interdisciplinary collaboration as well as a standardized oral assessment instrument and inconsistent or absent oral assessment tools affect nurses' performance on oral care which resulted to have a low level of oral care practice (32). For example majority of Nurses in Rwanda, they have never used a toothbrush (53.2%) toothpaste (63.8%), or Chlorhexidine solution (89.4%) as it was recommended in

oral care protocol (40). Then providing oral care education resources to nurses enhance their perception and improve practice.

A most recent study revealed that facilitators of oral care can be depicted into three groups such as patient, nurses-center, and system-focused. Moreover, the need for a formal protocol for oral care assessment, education on oral care to enhance nurse's awareness and sensitiveness, and the role of nursing manager to confirm for adequate and appropriate oral care among patients were the views from Nurses on factor facilitating oral care (41). Another factor reported was the lack of painful symptoms that bring the perceived need for oral care among terminally ill patients (43). Also, a study in health professional students' understanding of oral health traumatic brain injury revealed that skill and knowledge of the health care provider are important factors promoting the quality of oral care to the critically ill patient(44).

In the Tanzania context, a study on knowledge and practice of intensive care nurses on prevention of Ventilator-Associated Pneumonia documented that majority of ICU nurses 105 (88.9%) had no intensive care training, and 80 (67.8 %) were working in ICU for less than 10 years. Therefore study recommended ICU environment should enable a nurse to translate knowledge into practice by ensuring the availability of facilities (25).

2.4 Research Gap

The experiences of ICU nurses in providing oral care to critically ill patients are the essential aspect of nursing caring to prevent disease-associated with oral health. Several studies have been conducted in developed and low-middle income countries on oral care to critically ill patients which brought forward a vast knowledge concerning, experiences, barrier, and motivation on providing oral care to critically ill patients. According to the knowledge gap identified to each specific study objective, especially in Tanzania little is known on how nurse translate practice into an experience when providing oral care to a critically ill patient admitted at ICU. Therefore, the study focused on exploring the experiences of intensive care unit nurses on oral care practices to the critically ill patient at Muhimbili National Hospital, Dar es Salaam, Tanzania.

CHAPTER THREE

3.0 METHODOLOGY

The present chapter describes the study design, study area, study population, sample size determination, sampling procedure, and methods that were used for data generation.

3.1 Study design

This study used a qualitative explorative study design. The study design was chosen due to the reasons that it enables the researcher to have an in-depth understanding by exploring the experience, challenges, and practice of oral care to critically ill patients in their natural setting. The choice of this design is appropriate to describe the experience of ICU nurses who are directly involved in the provision of oral care to critically ill patients. The analytical description would provide a researcher with a deeper vision of the problem to employ appropriate intervention for improving oral care among ICU nurses. Therefore the exploratory research aims to discover an insight of a well-grounded picture from a situation being under the study to be familiar with the basic details and setting (45). Furthermore, it is more flexible thus it provides the chance for a researcher to probe participant responses with various research questions but also it gives the freedom of response to explore their view on challenges and experience on oral care practice.

3.2 Study area and setting

The study was conducted at Muhimbili National Hospital. Muhimbili National Hospital is located at Ilala City Council in the Dar es Salaam region. The region is the largest city located in the eastern part of Tanzania between these coordinates 6° 48' 8.4708" S and 39° 16' 46.4016" E that covers an area of 1590 km^2 on a natural harbor on the coast of East Africa. Administratively the region has been divided into five districts: Kinondoni, Temeke, Ubungo, Ilala, and Kigamboni. The region has a 4.36 million population account for 10% of the total Tanzania mainland population(46).

The hospital has been selected as the study area because is the national referral hospital in Tanzania, received patients referred from the surrounding hospitals, self-referral, and regionals hospitals in the country. The hospital has 1500 beds at the time of the study. A high number of 2,000 patients attending per day (The United Republic of Tanzania, 2020).

Also, the medical ICU at MNH was selected as the study setting because it had the capacity of admitting 220 patients to the Intensive Care Unit annually. Most of the patients referred to the Medical ICU at MNH are very sick and some of them are in a critical stage of their

disease. But nurses working in this hospital have experience in caring for critically ill patients.

3.3 Study population

Study population refers to the group of human beings or non-human entities that possess some common characteristic in which a researcher is interested or criteria for inclusion in a given setting (48). The study population in this was registered nurses working at Muhimbili National Hospital, Registered nurses recruited in this study were those who work at the Medical ICU because most of the patients admitted in this unit are immobile and highly dependent on nursing care. Registered nurses are the ones with the Diploma, Advanced Diploma, Degree in Nursing, or Masters and registered by Tanzania Nurses and Midwives Council (TNMC). Nurses working at the medical ICU play a major role in providing oral care to critically ill patients. Hence their experience and challenges in providing oral care were explored through interviews to gain insight for improving oral care to critically ill patients.

3.4 Sample size and selection.

Several factors control the sample size used in qualitative research such as the composition of the sample, saturation point, demand from the grant provider or journal, etc. (49). The study used saturation point as the main factor to decide sample size. Saturation point was used to determine the sample size after the participant provide maximum information on the topic of the study when started to generate similar themes from the subsequent interviews (50,51). The researcher interviewed eighteen participants to reach the saturation point from the information generated in the field.

3.5 Sampling procedure

Sampling refers to the technique or method used to select a portion of the population for the study. Participants were selected purposively based on their proficiency and experience (52). The researcher chose potential participants who had informative with adequate and usefully experience regarding oral care to critically ill patients. To ensure maximum variation and avoiding bias, the study included registered nurses from different backgrounds in medical ICU, level of education, in expressing their views on experience, challenges, and practices regarding oral care to critically ill patients.

3.6 Inclusion and exclusion criteria

3.6.1 Inclusion criteria

The study included all registered nurses with working experience for more than one year (probation period) and fully responsible to care for critically ill patients in the medical ICU at Muhimbili National Hospital.

3.6.2 Exclusion criteria

The study excluded all nurses who were absent at a working place during data collection periods like those in the full-time school schedule, acute ill condition, and those on long leave.

3.7 Data collection method

In this study, a researcher conducted in-depth interviews. An in-depth interview guide helped the researcher to gain insight and a deep understanding of nurses' views regarding their experience when providing oral care to critically ill patients. Before data collection, an appointment was made two days before the interviews through short messages and telephone calls to potential participants who agreed to participate in the interviews, and the interview was conducted by a researcher.

On the day of the interview, selected participants were visited at the medical ICU, the researcher explained the aim of the study and the rationale for participating in the study. Then participants who are willing to participate in the study were requested to choose a convenient time and place for an interview. The interview was conducted in the Swahili language because is the national language spoken by a majority of the participants, for maximum participation during the interview. Audio digital recorder and notebook were used to record information obtained during the interview. Moreover, written informed consent to participate in the interview was obtained from each participant. Confidentiality and privacy were guaranteed, no name of the participant was mentioned and will remain unknown.

The duration for each interview was estimated to be 60 to 90 minutes for all registered nurses from the medical ICU who met inclusion criteria for this study. The interview was conducted in the Swahili language because is the national language spoken by a majority of the participants, for maximum participation during the interview. Audio digital recorder and notebook were used to record information obtained during the interview. Data obtained was transcribed by the researcher from verbatim to written notes.

A non-participatory checklist was used to explore the ICU nurse practices in the provision of oral care to critically ill patients. Moreover, Roulet *et al.*, (2017) suggested the use of covert non-participation observation methods since it allows researchers to collect data as an insider, reducing the risk of those under study modifying their behaviors and can thereby reveal secretive behaviors. A covert non-participatory observational enabled the researcher to avoid bias when the researcher adopted the same routine and culture in ICU to observe nurse's practice without knowing they were observed. Therefore, observations were conducted for eighteen participants by the researcher to investigate ICU nurses' practices during the provision of oral care to critically ill patients before an interview of the participant to avoid behavior modification among nurses.

3.8 Data collection tools

A semi-structured interview guide was used as a data collection tool. This method was used to uncover a deeper understanding and extract information on how ICU nurses perceive challenges and experiences on oral care practices to a patient admitted in the Medical ICU (Showkat and Parveen, 2017). It has consisted of open-ended questions on an issue like participants' demographic characteristics in the ICU perception of nurses' experience, practices, and challenges related to the oral care practice. The open-ended questionnaire was developed after reviewing the literature on oral care to critically ill patients according to the specific objectives of the study (Said, 2012; Muleme et al., 2017; Hussain et al., 2018; Andargie and Kassahun, 2019). Therefore, a semi-structured interview guide has been comprised with the questions related to experience, knowledge, and skills that motivate ICU nurses to provide oral care to critically ill patients. Also probing questions for Nurse's experience was consisted of the views or opinions, importance, contributes, how do ICU nurses perceive and feel when touching and cleaning the oral cavity for critically ill patients. Moreover, participants were requested to prioritize oral care with the other nursing care provided to critically ill patients. Furthermore, participants were requested to describe the oral care practices that should be done daily to critically ill patients in a medical ICU. The question used for probing were like how often do you perform oral care, the material used for cleaning the patient's mouth when admitted to ICU, managing oral care to critically ill patients at an insufficient time due to workload, tool/guide for oral care assessment, resources/supplies for the provision of oral care. Lastly, the question was intended to uncover the difficulties ICU nurses face in carrying out regular oral health care for critically ill patients.

Also; an observational checklist was used as the additional data collection tool to identify the ICU nurse's practices on the provision of oral care to critically ill patients. The checklist was developed based on the available oral care assessment, protocol as well as the recent literature on comprehensive oral care to critically ill patients (23,54).

3.9 Pre-testing

An interview guide was pre-tested for two nurses (10%) who provided services to critically ill patients at Muhimbili National referral hospital, excluded nurses from Medical ICU. Pre-testing of the interview guide was done at MNH because critically ill patients were admitted from various regional hospitals country-wide. The pretest provided a clear indication and guidance such as the average time allocated for interviewing one respondent that helped to improve the interview guide.

3.10 Data management and analysis

Confidentiality was strictly maintained by the researcher throughout the research process such as when taking audiotapes, field notes, and during the analysis stage. The information taken from the participant was used for academic purposes only. Access to the transcript and audiotapes information was protected by password computer and backup of data with external storage devices into an encrypted file with passwords on daily basis to maintain data safety and confidentiality.

The data generated from the interview as well as interview notes were reviewed daily and checked against audio-recording information by the researcher because she has a deeper understanding of the data to ensure accuracy and completeness to facilitate the analysis process. The audio recorded files were transcribed verbatim into the Swahili language of an electronic word document and then translated into the English language by the independent third party who had a strong command of both English and Swahili languages. Then to ensure the quality of the translation, a researcher double-checked the translated against the original transcript. Thereafter English transcript was made available to the supervisor to familiarize with the data and generate insight into the contents. Then the researcher conducted data analysis with guidance from the supervisor.

A qualitative thematic analysis approach was used for identifying, analyzing, and reporting patterns (or themes) from a semi-structured interview guide to address the research objectives (55).

Thematic analysis was used to guide the study through a developed theme based on the study objectives. Then a deductive method was conducted to guide the analysis of data whereby

predetermined themes or questions were used to analyze the data (Braun and Clarke, 2006). In this approach, the data the transcript was read and re-read to become familiar with the data. Then it was followed by systematic arrangement along with the generation of initial codes. Moreover, code was generated for reviewing and identify the pattern of the data set relevant to the research questions. Data was grouped and merged from the similar code which was related to the pre-set research questions to form a group of subthemes. Lastly, the emerged themes were reviewed and defined as well as naming the themes and then shared with the supervisor to discuss their relevance with research questions to produce a scholarly report of the analysis (Braun and Clarke, 2006).

3.11 Trustworthiness

Trustworthiness was ensured throughout the process of collecting qualitative data. The criteria to assess trustworthiness include credibility, transferability, and dependability (57). Therefore, the following strategies were addressed to maximize the quality of data and ensuring trustworthiness.

i. **Credibility**: To enhance credibility, the researcher developed an interview guide and collect data by herself for one month. Furthermore, the researcher has and experience in ICU and is knowledgeable on health care especially oral care to critically ill patients. This provides a prolonged engagement on something crucial to capture the reality of those being studied. Also, during data analysis, the researcher shared interpreted data with a supervisor who has extensive knowledge in critical care services and qualitative studies. This minimizes the influence of the researcher's pre-understanding in data collection and interpretation, allowing deeper insight into the content of data and stay close to the participant verbatim and quotes from a participant to be comfortable.

ii. **Dependability**: The notebook or a process log was used by the researcher to record all activities that happen during the study and decisions about the aspect of the study. Also; the same interview guide was used to ensure consistency during data collection to all participants. Besides, dependability was increased when recruited emergent design, meaning that the interview guides were enriched with insight from previous interviews. Then the interview was reviewed and modified based on the reflection of the newly emerged issues and insights generated.

iii. **Transferability**: refers to the extent to which the findings can be transferred to other settings or groups (57). To facilitate transferability, a clear, distinct, and detailed

description of the study setting was provided by the researcher to enable the theoretical and naturalistic generalization of the study findings to another setting with a similar context. Therefore, the finding was presented accurately and all other contextual information was described to include characteristics of the participants.

3.12 Ethical consideration

The study was approved by the Muhimbili University of Health and Allied Sciences (MUHAS) Institutional Ethical Review Board. The permission to conduct this study was obtained from Muhimbili National Hospital before starting the data collection process. Written informed consent was given to Medical ICU nurses before data collection. Participants were requested to give their consent for their recording during the interview. Both informants and participants were informed on the objectives study, risks, and benefits of taking part in the study. Then voluntary participation was informed to all participants and they could quit the study at any point in time without giving explanations. The interview was conducted in a private room located in the medical ICU to avoid external interaction and no names or any individual identifier was taken to maintain the confidentiality of the participants.

3.13 Dissemination plan

A disseminated report was reviewed by colleagues in the field of nursing especially critical care nursing to ensure common understanding. The findings of the study will be presented to the member of staff working in ICUs especially a Medical Officer-in-charge of Muhimbili National Hospital, Muhimbili University of Health and Allied Science, Muhimbili School of Nursing, MUHAS library, and Director of Postgraduate MUHAS. Also finding of the study will be disseminated and the finding will be disseminated at national and international scientific conferences and publication in peer review journal

CHAPTER FOUR

4.0 RESULTS.

This section includes a description of the result starting with participants' characteristics followed by finding regarding nurses' practices of providing oral care. The sections end by presenting analysis of interviews regarding the experiences of ICU nurses on the provision of oral care to critically ill patients. The findings are presented as themes and are illustrated by a quotation from the interview.

4.1 Participant characteristics.

A total of 18 study participants were enrolled in the study and many 10(55.6%) of study participant were females. Moreover, most 7(38.3%) were at the aged between 31 to 35 years. Among 12(66.7%) of the study participants had a diploma in nursing while few of study participants 4(22.2%) received oral care training and 12 (66.7%) had a working experience of one to five years in ICU (see table 2).

Table 1: demographic characteristics of the study participants.

Characteristics		Frequency	Percent n (%)
Age (in years)			
	25-30	6.0	33.3
	31-35	7.0	38.3
	36-40	5.0	27.7
Gender			
	Male	8.0	44.4
	Female	10.0	55.6
Level of education			
	Diploma in Nursing	12.0	66.7
	Degree in nursing	6.0	33.3
ICU training regarding Oral care			
	Yes	4.0	22.2
	No	14.0	77.7
Working experience			
	<1years	2.0	11.1
	1-5 years	12.0	66.7
	6-10 years	6.0	33.3

4.2: Nurses practices on providing oral care

Eighteen observations on oral care were conducted. From observation, it was noted that before oral care 11 nurses did not wash their hands and 5 did not wear gloves. Only 7 out of 18 nurses positioned a patient in semi-recumbent when providing oral care. During oral care, 12 observed nurses did clean mouth using toothbrush or gauze moistened with mouth wash

saline and water, a recommended practice for oral care in ICU. Rinsing the mouth with clean water and swab during oral care is also recommended practice, but this was done by only 6 nurses. Though documentation is important for the continuum of care, 10 ICU nurses did not document it. Hand washing after oral care is also important, however, only 7 nurses did hand washing after oral care (Table 2).

Table 2: Observation checklist findings of ICU nurses' practices on oral care to critically ill patients.

Oral care practice	**DONE**	**NOT DONE**
Before oral care		
1. Hand washing	7	11
2. Apply clean gloves	13	5
3. Position a patient in a semi-recumbent	7	11
During oral care		
4. Clean mouth using toothbrush or gauze moistened with mouth wash saline or water	12	6
5. Rinse mouth with clean water and swab	6	12
6. Suction secretions as they accumulate, if necessary	13	5
7. Apply water-soluble jelly to patients' lips	11	7
After oral care		
8. Clean equipment and return it to its proper place	11	7
9. Hand washing after oral care	7	11
10. Documentation	8	10
Total score (%)	**56**	**44**

4.3 Experiences of providing oral care to Intensive Care Patients

During analysis of the interviews, three themes emerged that described experience of nurses in providing oral care to ICU patients. The three themes are: "Oral care as a nursing intervention in ICU patient"; "Prevention of oral disease and improving patient wellbeing" and; "Limiting factors for quality oral care practice in ICU". The theme "Oral care as a nursing intervention in ICU patient" provide nurses' description of the oral care as one of the nurses' responsibilities as they care patient in ICU. The theme "Prevention of oral disease and improving patient wellbeing" provides nurses' experience of what they view as the importance of oral care to ICU patients. Lastly, the theme "Limiting factors for quality oral

care practice in ICU" provides nurses' experience of what they view as barriers for oral care to ICU patients. Each theme is supported by categories that provide the manifest meaning of the interview. Themes and their related categories are presented in table 2 below.

Table 3: Themes and their related categories

Guiding thematic question	Category	Themes
Nurses' experience of providing oral care to ICU patient	Variation in timing and frequency for providing oral care	Oral care as a nursing intervention in ICU patient
	Variety of material needed for oral care	
	Patients' response and reaction to oral care	
	Nurses' feeling toward oral care	
	Competing nursing interventions for oral care	
Nurses' experience of implications of oral care to ICU patient	Oral care as essential nursing intervention	Prevention of oral disease and improving patient well being
	Oral care for promoting patient's comfort, physical and psychological well being	
	Prevention of oral disease through oral care	
Nurses' experience barriers for providing oral care	Shortage of equipment and materials for oral care	Limiting factors for good oral care practice in ICU
	Unavailable guideline for oral care practice	
	Inadequate staff competence for providing oral care	

4.3.1 Oral care as a nursing intervention in ICU patient

Participants in this study shared their experience of providing oral care to patients admitted in ICU. From their experiences, nurses working in ICU considered oral care as one of the key nursing interventions that each nurse caring with ICU patients is obliged to. From participants' description, oral care includes various nursing interventions such as assessment of the oral cavity, brushing the teeth, moisturizing the lips and mouth, and suctioning the mouth and oropharynx. It was noted from the interview that, there is variation of time and duration to nurses do oral care and that oral care as an intervention it requires availability of various equipment and materials. Furthermore, participants shared experience on how

patient's response and react during oral care but also how the nurses feels when they provide oral care to their patients. Also, from the shared experience it was noted that, there are several needs that compete with oral care, making nurses stranded and unable to provide oral care as it is needed

Variation in time and frequency for providing oral care

Participants in this study mentioned that mouth care is often delivered to all patients admitted ICU. Almost all participants in this study expressed the importance of conducting a thorough oral cavity assessment before oral care and insisted that a careful and thorough oral cavity assessment assist in identifying barriers for the patient to comply with oral hygiene. However, it was noted that, there was no consistency in term of time and frequencies of providing oral care. Some participants pointed out to provide oral care effective, oral hygiene should be conducted in an appropriate time and enough time should be dedicated to carry out this nursing intervention. One of the participants expressed that, oral care should be provided in the morning immediately after receiving the morning shift

"*During in the morning after receiving report you have to assess your patient then you shall continue with oral care it takes about 10 minutes* (Participant 18).

Though a frequency of 2 hourly is recommended for oral cleansing, different participants reported different frequencies for conducting oral hygiene. It was noted from the interview, oral hygiene is done below what is recommended and this was attributed by various reasons including excessive workload due to increased number of ICU patients and patient conditions. One participant attest this

"Oral cleansing to patient in ICU should be done six times a day but due to many patients, this kind of care is done two to three times a day" (Patient 5).

Variety of material needed for oral care

Participants in this study mentioned various material used for proper oral care including gauze, toothbrush, tooth paste, clean water, povidone, normal saline, and hydrogen peroxide. One participated reported that, when hydrogen peroxide is used has a tendency to of causing mucosa erosion because it is an acidic solution and therefore must be correctly diluted before use. However, participants recommended its uses for mouth

"To my opinion, I will recommend it could be better to provide hydrogen peroxide for the mouth wash" (Participant 12).

Patients' response and reaction to oral care

Participants reported on difficulty they encountered when performing oral hygiene to critically ill patients. Some participants narrated on how patients sometime close their mouths tightly making difficulty for nurses to access oral cavity for cleansing. Other patients were reported to be uncooperative during oral cleaning procedure, hindering nurses from providing oral care to such critically ill patient. In addition, some participants pointed out that it was difficult to provide oral care due to communication difficulties between patients and nurses. Participants in this study reported that sometimes patients demonstrate obviously that they are not ready for oral cleansing. The pain inflicted during oral care were thought to contribute into patient's reluctance for the oral care as stated by one participant

"I think this is a painful procedure because you can see some of the patient moving their head away and others close their mouth as you want to do oral cleansing" (Participant 1).

Nurses' feelings toward oral care

Participants in this study mention that, they always feel good whenever they do oral care to their patients. However, some participants reported that, they feel uncomfortable to perform a mouth wash when a patient's mouth has a bad smell. Then, nurses feeling and emotion to will act as the barrier on performing oral care to critically ill patient. In addition, participants expressed that performing oral care become difficult since they feel unpleasant. The quote below attest that.

"Performing oral care to patients who are having mouth with bad breath makes them to feel bad" (Participant 1).

Competing nursing interventions for oral care

Participants reported that because of the shortage of nurses in the critical care unit they feel overworked and they don't have time to performance oral care as required. Participant further explained sometime oral hygiene to the critically ill patient was delayed, postponed, and sometimes deferred due to heavy workload as narrated by one of the participants;

"The critically ill patient should be offered oral care by an ICU nurse six times a day but care is provided for two to three times a day and sometimes it's not easy to do what supposed is to be done due to workload with other activities" (Participant 7).

However, participants said that, they always strive to provide oral care as an important nursing intervention despite being constrained with other equally important responsibilities

4.3.2 Prevention of oral disease and improving patient wellbeing.

Participants were asked to give about their views on implications of providing oral care to patients admitted in ICU. From their experiences, nurses were of the views that, oral care improve overall patient wellbeing but also prevent patients from developing oral diseases. According to their experience, they view that oral care is one of the essential nursing interventions and that it contributes into improving patient's physical and psychological wellbeing.

Oral care as essential nursing intervention to ICU patient

Participant in this study mentioned that critically ill patient is often not able to practice oral hygiene by themselves. It was further reported that the inability to clean their mouth is due to a self-care deficit that commonly presents with a critical illness. When asked why carrying out oral hygiene to critically ill, a participant pointed out that the provision of oral care is one of the crucial nursing responsibilities to be practiced daily. Moreover, one of the participants highlighted, despite having various nursing activities, provision of oral care to critically ill patients is considered to be basic nursing practiced that has to be practiced daily.

"*I see it as a primary care for critically ill patients admitted to the ICU and should be provided daily*" *(P11).*

Oral care for promoting patient's comfort, physical and psychological wellbeing.

During interview, almost all participants mentioned that performing oral cleansing makes patients to be comfortable and relaxed. Apart from being considered as an essential nursing intervention, participants also said that, oral care play important role in promoting patient's wellbeing both physically and psychologically. It was reported that, frequent oral care left patient with a clean mouth and prevent them from developing bad smell. Other participants mentioned that, once they performed oral care, patient become calm and restful and thought that oral care made their patients to have peaceful mind

*"The thing is, cleaning a patient's mouth makes the patient feel better and gives him peace of mind". (*Participant 10*).*

Prevention of oral disease through oral care.

In addition to promotion of patient's comfort, physical and psychological wellbeing, participants considered oral care as a very useful intervention for prevention of oral diseases. According to some participants, when oral care is not done, the ICU patients develop sores in the mouths which become infected after some time. Participants argued that critically ill patients are immune-compromised and hence, are at high risk of being infected. However,

participants narrated that a regular oral cleansing play preventive role for both, oral and nosocomial respiratory tract infections, reducing patient's severity and mortality. One participant expressed this below

"*Oral hygiene is important because it reduces the risk of other infections that are caused by poor oral care in a critically ill patient*" (Participants 4).

Other participants explained that oral care enables critically ill patients to improve their immune system, further preventing patients from developing nosocomial infection particularly for patients on mechanical ventilator. One participant narrated this below

*"Regular oral care prevents infection especially for person who are intubated. For such patients it is very easy to gate infection in the airway due to poor oral condition. Therefore, if oral care is done accordingly it may help to promote patient health" (*Participant 12).

4.3.3 Limiting factors for good oral care practice in ICU

From their experiences, participants pointed out what they encountered as factors hindering their good practice of oral care to critically ill patients. Shortage of equipment for oral care; lack of guidelines for oral care practices and inadequate staff competence for providing oral care emerged as descriptive categories that explain participants experiences of factors that limit their good oral practice in ICU**.**

Shortage of equipment for oral care

From interview with participants, it was noted that, oral care procedure requires several materials and equipment to be in place. These include hydrogen peroxide used as mouthwash, toothpaste, toothbrush, suction catheter, forceps, gloves, syringe, clean water, povidone, gauze and normal saline. However, participants expressed their concerns regarding shortage of such equipment and materials that create some difficulty for them to carry out oral care practices as required. This can be attested by one participant below

"The oral care equipment and materials which we receive from the hospital do not meet the needs of oral care to critically ill patients" (Participant 9).

Moreover, shortage of equipment affects the frequency of providing oral care to the critically ill patient as one of the participants highlighted below,

"Some equipment must be available at the hospital to help provide oral care as required which is four times a day, but it become difficult to do so because the available equipment and materials are limited" (Participant 8).

Lack guideline for oral care practice

Lack of guidelines on guiding oral care procedure to critically ill patients was another hindrance for good oral care practices raised by participants. It was reported by participants during interviews that there is no guideline that can be used as standard operation procedures for oral care in critical care settings as shown in the quote below.

"*There is no guideline that guides nurses on how to conduct oral care for the critically ill patient"* (Participant 3).

Participants said that, often they use their experience to guide oral care practices, raising a concern for quality oral care required for critically ill patients. Due to lack of guidelines to guide their oral care practice, participants described a great variability in term of practice among nurses when performing oral care practice in ICU patients.

Inadequate staff competence for providing oral care

Inadequate competence for providing oral care were reported to be one of the challenges in performing good oral care hygiene to critically ill patients. Several participants expressed that inadequate skills on performing oral hygiene to an intubated patient affect the quality of oral care to critically ill patients. One of the participants reported this;

"I think sometimes oral care procedure is done correctly but not all the time. This is because some nurses do not have enough skills and knowledge about how to do oral health care" (Participant 10).

There was a plea from participants for training to improve their knowledge and skills required for the provision of oral care to critically ill patients.

"There should be training to upgrade nurse knowledge and skills on how to care critical ill patient in ICU mainly focusing in the provision of oral health care" (Participant).

CHAPTER FIVE

5.0 DISCUSSION.

This chapter begins with a discussion of the findings followed by a discussion of the methodology considering the implication of this study for nursing practice, training, and recommendation for further study.

Oral care practice to critically ill patients

Oral hygiene in the ICU is one of the most important nursing interventions intending to maintain and promote comfort, health, and the general quality of life. However, findings of this study show that oral care practice in ICU is not done as recommended. As the study findings revealed, oral care is commonly done in the morning hours, however very few nurses assessed patients before providing oral care. Human and Bell, (2007) emphasized on the assessment of the patient before providing care in order to identify potential barriers like a pain and intervene early to improve the care provided and promote comfort for both patient and nurses (3).

This study found variation on time and frequency to perform oral care to ICU patients. Oral care as an intervention is recommended to be performed four to six times per day and that, the first oral care be performed early in the morning after a thorough oral assessment. This is contrary to what was found in this study where nurses performed oral care once or twice per day. This could affect the goal of oral care which focus on maintenance of oral hygiene and promotion of patients' wellbeing. Frequently performed oral care of more than five times per day has been found to prevent ventilator-associated pneumonia (Ibrahim, Mudawi and Omer, 2015; Hua *et al.*, 2016).

Moreover, the study finding revealed that nurse's variety of equipment and materials for oral cleansing. Nurses in this study reported to use hydrogen peroxide for mouth wash. However, other study shows that the use of hydrogen peroxide has been reported to cause discomfort and mucosal damage to users. The use of hydrogen peroxide as mouthwashes has not been recommended for use in the critically ill population despite of showing good outcome in other population (3).

Furthermore, findings of this study demonstrated that performing oral cleansing was never been easy due to patients' reaction to oral care practice. Nurses practicing oral care reported

some difficulty they encounter from un-cooperative patients. As it was reported in the study, some patients do not want to open their mouth during oral care, hence nurse become restricted to access oral cavity. As a result, nurses' fails to provide oral cleansing as required, leaving patients with the risk of poor oral hygiene. Patient response toward care have been reported in other studies to influence disease outcome and satisfaction to both nurses and patients. (41). In contrary, a review of literature suggested that, nurse should have an experience or understood the provision of oral care to critically ill patient with a negative emotion particularly fear, anxiety, and panic through a gut feeling or a six sense and identify this as intuition (59).

Besides, participants in this study reported that because of the shortage of nurses in the critical care unit they feel overworked and their time is rationed. Then workload makes oral care a difficult task to nurse. This study was consistent with the previous study which report that administrative issues including inadequate staffing levels and excessive workloads compound this problem often resulting in the delegation of oral care delivery to unlicensed personnel without specific instructions or guidelines for providing the care (32).

Additionally, the study revealed that nurses not prioritizing provision of oral care to critically ill patients among other activities. This has been attributed with the inadequate abilities among nurses to perform oral care and lack of hospital supports. However, study done by Rello *et al.*, (2017) explained that in European ICUs, oral care was commonly considered of high importance and is generally carried out by nurses. Similarly, a study conducted by Charalambous *et al.*,(2020) documented that, nurses were not performing oral care to their patients because of workload and other administrative roles (41).

Importance of oral care to critically ill patients admitted to the ICU

Despite of unsasfactory oral care practice, the study participants still considered provision of oral care as one of essential nursing intervention to ICU patients. This is due to fact that, oral care makes a patient comfortable as well as prevent oral infections and other systemic infections. The findings of this study also demonstrate that oral care is essential in promotion of patient wellbeing, both physically and psychologically. Due to illness, critically ill patients depend on nurses on providing oral care to prevent associated oral diseases like VAP. It is now considered as fundamental nursing care in which nurses has to include in care bundle for critically ill in ICU and that the mouth care to hospitalized patients should be done every 2 to 4 hour and each time should take 5 to 7 minutes to brush the teeth, gums, tongue and moisturizes the lips (61).

Findings of this study also revealed that provision of oral care to a critically ill patient is not only crucial care but also a therapy that can help patients recover early from critical illness due to the reasons that oral care reduces oral infection. This is consistent with the study finding reported maintaining oral hygiene was a key part of good nursing care for critically ill patients. It can also help prevent ventilator-associated pneumonia in intubated patients as well as patients with a tracheostomy who need the same mouth care as those who are intubated (15).

In addition, the study findings indicates that participants in this study also considers effective oral care can be used to make patient relax but nurses feel good to provide good oral care. However, as it was found in the same study some nurses feel unpleasant to provide oral care. Feelings and emotions act as a barrier to provide oral care to hospitalized patients (61). Besides, the study finding reported that participants not only considered oral cleansing as a therapy but also an oral comfort that provides the patient peace of mind. This was in line with previous studies that reported that nurses are responsible and accountable for this care to prevent the patient from hospital-acquired infections and feel them pleasant during hospital stay (15,17,22).

Moreover, the study reported that oral cleansing prevent patient from developing oral sores from the uncleansed mouth. Critically ill patients are immune- compromised and are at the high risk of developing infections. Hence regular provision of oral care act as a preventive measure for development of oral infection including oral mucositis. Oral mucositis often causes pain, affects eating and nutritional intake, and it also increases the risk for infection due to open sores in the mouth. Moreover, oral mucositis has a significant effect on the patient's quality of life (62). Oral care also prevents pressure sores from devices such as endotracheal tubes and prevents trauma from grinding of teeth and biting of the tongue (5)..

Barrier encounter by ICU nurses when providing oral care to critically ill patient

A limited supply of oral care equipment was among the challenges reported by nurses when providing oral care to critically ill patients. Inadequate oral hygiene equipment was reported to weaken the provision of oral care. Besides, the nurse mentioned, tray, forceps, syringe, suction catheter, toothpaste, toothbrush, clean water, and gloves to be among the equipment used for oral hygiene. Therefore, inadequate oral care equipment would impair nurse experience in oral care practice to critically ill patients. However, the translation of evidence-based knowledge into clinical practice depends on the effective improvement of clinical working environments. An adequate supply of equipment could improve effectiveness in the

clinical setting like ICU (Alja'afreh, Mosleh, and Habashneh, 2018). In the same way, another study reported nurses demanded better supplies and equipment to perform oral care in the ICU (60).

The study describes the need for oral care guidelines to provide consistent quality of oral care among nurses. The concern was raised by participants that, the guideline was to assess the standard of practice. More important, routine oral decontamination is an effective method of establishing optimal oral care. The finding from the observation revealed various malpractices resulted in absence of oral care guidelines, like nurses do not document, wash hands before and after oral care, position patient in semi-recumbent, rinse and swab mouth with water. Considering the study by D'souza, (2019) it can be established that, guidelines provide direction on what kind of oral care should be provided to critically ill patients, when and where should it be provided, and who should be making the dental treatment decisions (D'souza, 2019). Therefore, the results of the other study showed that patients' oral health status was improved after receiving oral care based on the guideline (31).

Inadequate skill for oral care was also reported to affect nurse experience in providing quality oral care. Continuing professional development programmes should be instituted for ICU nurses to increase their knowledge levels. Continuing professional development programs should include skills updates and re-testing to ensure all ICU nurses maintain high standards in advanced clinical skills (38). Furthermore, the finding from the observation show nurses does not document the oral care practices done to critically ill patient. Therefore, the hospital administration should consider the close supervision and management of the practice of oral care among ICU nurses to optimize oral hygiene

Lack of in-service training on oral care to critically ill patients emerged as one of the nurse's concerns. In this study, none of the participants ever attending any training about oral care to critically ill patients. A study finding from the participant's characteristics shows that eighty percent of ICU nurses had working experience of more than five years. Likewise, ICU nurses by sixty percent had not attended oral care training. Also, the current practices observed in this study, nurses use the toothbrush or gauze moisten with water to clean the mouth of the critically ill patient. The evidence shows that majority of nurses working in an ICU had practiced oral care with outdated and inadequate knowledge. However, the minority of nurses working in ICU did not receive oral training or education on oral care in nursing school. In-service training will full fill the gap on the understanding and skills needed in compensating nursing experiences in considering oral care as a difficult and unpleasant task

(60). Subsequently, in-hospital training regarding oral care protocol could improve nurses' perception of ICU nurses regarding oral care for critically patients (63).

Theoretical underpinnings

The study was guided by Orem's Self-Care Deficit theory developed by Doretha E. Orem in 1990 which is the basic element of Orem's general theory of nursing to construct the conceptual framework for this study (26). According to Orem's general theory, nursing care was required by critically ill patients who were incapable and limited inability to practice oral care. Nurses are therefore required to examine the importance of oral care to the critically ill patient to meet the self-care demand of critically ill patients. The nursing agency like hospital management should undertake all barriers encountered by nurses on practicing oral care to critically ill patients. As the critical patient have the self-care deficit, then nursing agency helps nurses incorporate patient into newly prescribed, oral care measures available in the self-care systems to recover from disease or injury. This requires specialized knowledge, skill, training, equipment for oral healthcare, oral care guideline, and patient collaboration. Likewise, Orem identified five methods by which the nursing agency helps the individual to meet their self-care needs, acting for or doing for another, guiding and directing, providing physical or psychological support, providing and maintaining an environment that supports personal development and teaching. Our study found that nurses had good oral care practices, majority recognize the significance of priorities oral hygiene to the critically ill patient which helping them to improve the patient conditions.

Methodological considerations.

Trustworthiness in the study is achieved when the finding is worth believing. According to Graneheim and Lundaman (2004), trustworthiness in a qualitative study is assessed using four main criteria namely, credibility, transferability, dependability, and conformability. The credibility of this study was ensured by triangulating data from interviews and observation. Furthermore, data were analyzed and interpreted by the researcher and shared with a supervisor who has extensive knowledge in critical care services and qualitative studies. To enhance credibility and dependability, the data collected from the interview were triangulated with those from the field note and observations of the oral care practice to the critically ill patient during the analysis process, and themes and categories were shared with a supervisor who gave comments and suggestion. To confirm that the finding reflects informant perspective rather than researcher understanding of the problem, the presented finding was supported by quotes. Transferability was enhanced by describing the study context, process for data collection, and analysis.

Limitation of the study.

The study examined practices and experiences of providing oral care to critically ill patients among nurses working in ICU. Some limitations were observed. The study noted that oral care practices should incorporate multidisciplinary professionals like dentistry, procurement, and supply department on describing their view concerning the poor supply of oral equipment. However, the researcher wanted to explore the perception and/or views of nurses in a particular phenomenon. The current study was conducted at a national referral hospital. The finding may not be representative of the general population of nurses in another setting. Another study is required to include regional level and zonal level hospitals.

In addition, the Hawthorn effect would be another limitation to the study, whereby participants could be aware of being observed which may change their behavior. This could happen to the study because behavior is only temporary that it takes a short time for observed to return to their normal practice. However, in this study, a covert method of observation was employed to observe the behavior of the nurses when practicing oral care. Then researcher engaged herself in the daily routine with the study participants. Therefore, in this situation, the observation finding was not affected by the Hawthorn effect.

CHAPTER SIX

Conclusion and recommendation.

6.1 Conclusion.

The study highlighted the practices and experience regarding provision of oral care to critically ill patients. Oral care was found to be essential nursing and its practices prevent oral diseases and promote patient physical and psychological wellbeing. However, the nurses' practices of providing oral care in ICU was found to be below what is recommended. Shortage of equipment and materials, inadequate skills among nurses for oral care procedure and lack of guidelines for oral care practices was found to limit nurses from providing optimal oral care in critical care settings. To improve of oral care practices in ICU, effort should be made to ensure availability of equipment and medical supplies needed for oral cleansing. There is also a need to equip nurses with up-to-date knowledge and skills and provide them with evidence-based guidelines that ensure quality provision of oral care to critically ill patients.

6.2 Recommendations.

The present study raises the significant matters on the experiences of nurses practicing oral care to the critically ill patient at MNH. The recommendation included training of nurses and ensuring enough supply of oral care equipment.

Recommendation to ICU nurses

Registered nurses are recommended to be ready to update their knowledge regarding oral care to critically ill patients to improve the patient's condition to lower the mortality and morbidity rate of the patient from VAP.

Recommendation to hospital management

i. The hospital management is recommended to do on the job training about the oral care practices to critically ill patients.
ii. The hospital management is recommended to ensure a constantly supply of oral care equipment to nurses to smooth their working environment.
iii. Hiring enough staff to reduce the workload resulting from the shortage of nurses in the ICU.
iv. Nursing management is recommended to develop an oral care guideline to standardize oral hygiene among nurses

Recommendation to the teaching institution in MUHAS.

i. The institution is recommended to facilitate evidence-based practiced research to highlight the importance of oral care to critically ill patients that could be covered in the coved during training programs at various levels of the education.

ii. To include oral hygiene in the curriculum as a topic at degree or master level focusing the oral care practices to critically ill patients.

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APPENDICES

Appendix I: An in-depth interview Guide (English Version)

Perceived Challenges and Experiences in provision of oral care to critically ill patients among Intensive Care Unit Nurses

Parts A: Introduction, consent and rapport building.

Part B: Participant's background information.

Start Time: _____

Introduction/summary of the study

Interviewer: My name is **Agness Lazaro Laizer, May** I thank you for your dedication and commitment to take part in this research interview. The interview will take about 60 minutes to 90 minutes. I will be taping the session because I don't want to miss any of your comments or information. Therefore, I would like to talk with you about a perceived challenges and experiences in provision of oral care to critically ill patients among Intensive Care Unit Nurses. Your thought or views and opinion will help to understand the gap both in term of practice, perception and challenges regarding oral care to critically ill admitted at ICU.

Before we begin, I would like to confirm that you have given your voluntary consent to participate in this interview. But also, you don't have to talk about anything you don't know and you may end the interview at any time and there is no right or wrong answer. Do you agree? Do you have any questions about what I have just explained?

Ok, then, I would like to begin.

Semi-structured interview guide on exploring the perceived challenges and experiences in provision of oral care to critically ill patients among intensive care unit nurses

Section A: Background information

1. Nurses Demographic information
    a) Identification number
    b) Can you tell me about yourself?
    c) Age_____
    d) Sex
        i. Male [ ]
        ii. Female [ ]
    e) Education level
        i. Doctorate degree [ ]
        ii. Master degree [ ]

iii. Bachelor [ ]

iv. Diploma [ ]

v. Certificate [ ]

f) Did you any attend ICU training about oral care to critically ill patients?

i. Yes [ ]

ii. No [ ]

g) Year of working experience as an ICU nurse.

i. <1 years [ ]

ii. 1-5 years [ ]

iii. 6-10years [ ]

iv. >10 years [ ]

h) What is your current employment position

i. Nurse manager [ ]

ii. Nurse practitioner [ ]

iii. Critical care educator [ ]

iv. Bedside nurse. [ ]

Section B: Interview guide

Question 1: Practices of ICU nurses in the provision of oral care to critically ill patients.

Oral care is an important aspect of nursing care. Then, what are the oral care practices that should be done daily to critically ill patients in a medical ICU?

Probe

a) How often do you perform oral care on critically ill?

b) What materials do you use for cleaning the patient's mouth when admitted to ICU?

c) How do you handle oral care to critically ill patients at an insufficient time due to workload?

d) After performing oral health to the critically ill patient, how do you assess your patient oral care status? Is there any tool/guide to establish for the assessment?

e) To what extent your hospital provides adequate resources/supplies for the provision of oral care?

Question 2: ICU Nurses' experience in providing oral care to critically ill patients

Muhimbili National hospital is the national referral hospital offering Intensive Care to critically ill patients. Does practical experience, knowledge, and skills motivate the provision of oral care to critically ill patients at Muhimbili National Hospital?

Probe:

a) What are your views or opinion regarding oral care provided and its impact to critically ill patients at the Medical ICU?

b) How important do you think oral health is to the critically ill patient admitted to the medical ICU?

c) What do you think that oral care contributes less to critically ill patient's health and wellbeing?

d) What comes to your mind when you think of cleaning the oral cavity for critically ill patients?

e) How do you think carrying out oral hygiene to critically ill patients it's one of the crucial nurse responsibilities during daily practices?

f) How do you feel touching the mouth of the critically ill patient?

QUESTION 3: Perceived barriers ICU nurses' facing on the provision of oral care to critically ill patients

i. What are difficulties/barrier/challenges do you face in carrying out regular oral health care for critically ill patients? ***Please elaborate.***

ii. How do you compare the provision of oral care to critically ill patients with other nursing care such as physical assessment, bowel and bladder care, bed bath, chest physiotherapy, gastrointestinal care, and changing position?

Appendix II: An in-depth interview Guide (Swahili Version)

Napenda kukushukuru kwa kujitolea kwako kushiriki katika mahojiano haya. Naitwa **Agness Lazaro Laizer** na ningependa kuzungumza nawe juu ya "***Maoni Na Uzoefu Wako Kuhusu Mazoea Ya Utunzaji Wa Kinywa Kwa Wagonjwa Mahututi"***. Mahojiano yatachukua kama dakika 60 hadi dakika 90. Nitakuwa nachukua kumbukumbu za kikao kwa sababu sitaki kukosa habari au maoni yako yoyote. Kumbuka pia nitakuwa nachukua kumbukumbu ya sauti kwa njia ya vinasa sauti na maandishi mafupi mafupi wakati wa mahojiano. Lakini pia, sio lazima uzungumze juu ya chochote usichojua na unaweza kumaliza mahojiano wakati wowote na hakuna jibu sahihi au sahihi.

Je! Kuna maswali yoyote juu ya kile ambacho nimeelezea hivi punde.

Taarifa binafsi za Mashiriki wa mahojiano

a) Namba ya Mshiriki

b) Jinsia

   i. mke [ ]

   ii. mume [ ]

c) Kiwango cha elimu

   i. Shahada ya udaktari [ ]

   ii. Shahada ya uzamili [ ]

   iii. Shahad [ ]

   iv. Stashahada [ ]

   v. Astashahada [ ]

d) Je ulihudhuria mafunzo ya ICU?

   i. ndiyo [ ]

   ii. hapana [ ]

e) Je ulihudhuria mafunzo ya afya ya kinywa?

   i. Ndyo [ ]

   ii. Hapana [ ]

f) Je una uzoefu wa muda gani kazini kama Muunguzi wa ICU.

   i. <1 miaka [ ]

   ii. 1-5 miaka [ ]

   iii. 6-10 miaka [ ]

   iv. >10 miaka [ ]

g) Je una cheo gani katika hii wodi ya ICU kama muuguzi

i. Meneja wa wauguzi [ ]
ii. Muuguzi [ ]
iii. Muelimishaji wa huduma za ICU [ ]
iv. Muuguzi wa ICU [ ]

Mwongozo wa mahojiano.

Swali la kwanza: mazoea ya utunzaji wa kinywa kwa mgonjwa mhututi.

Utunzaji wa mdomo ni jambo muhimu katika uuguzi; hivyo basi yapi ni mazoea ya utunzaji wa kinywa ambayo yanayopaswa kufanywa kila siku kwa wagonjwa mahututi katika ICU ya matibabu?

Maswali madogo

a) Ni mara ngapi unafanya utunzaji wa kinywa kwa mgonjwa mahututi
b) Unatumia vifaa gani kusafisha mdomo wa mgonjwa anapolazwa ICU?
c) Je! Unashughulikiaje utunzaji wa kinywa kwa wagonjwa mahututi kwa wakati wa kutosha kwa sababu ya mzigo wa kazi?
d) Baada ya kufanya afya ya kinywa kwa mgonjwa mahututi, unawezaje kutathmini hali yako ya utunzaji wa kinywa cha mgonjwa? Je! Kuna zana / mwongozo wowote wa kuanzisha kwa tathmini?
e) Je! ni kwa kiwango gani hospitali yako hutoa rasilimali / vifaa vya kutosha kwa utoaji wa huduma ya kinywa?

Swali la pili: Uzoefu wa muuguzi katika utunzaji wa kinywa cha mgonja mhututi.

Hii ni hospitali ya kitaifa ya rufaa inayotoa Huduma kwa wagonjwa mahututi. Je! ni njia zipi za zinaweza kukupatin uzoefu kwa vitendo, ujuzi, na ustadi ulionao ili kuchochea utoaji wa matunzo ya kinywa kwa wagonjwa mahututi katika Hospitali hii?

Maswali madogo

i. Je! Yapi ni maoni yako na athari zake kuhusu huduma ya kinywa inayotolewa kwa wagonjwa mahututi katika ICU?
ii. Je! unafikiri afya ya kinywa ni muhimu kwa mgonjwa mahututi aliyelazwa katika ICU?
iii. Unafikiria nini kuwa utunzaji wa kinywa unachangia kidogo kwa afya na ustawi wa mgonjwa?

iv. Ni nini kinakuja akilini mwako unapofikiria kusafisha kinywa cha Mgonjwa mahututi?

v. Je! unafikiria kufanya usafi wa kinywa kwa wagonjwa mahututi ni moja ya jukumu muhimu la Muguzi kila siku?

vi. Je! Unahisije kugusa mdomo wa mgonjwa mhatuti?

Swali la tatu: Changamoto za utoaji huduma ya kinywa kwa wagonjwa mhututi.

i. Je! Unakabiliwa na ugumu gani katika kutekeleza huduma ya kawaida ya afya ya kinywa kwa wagonjwa mahututi? Tafadhali fafanua.

ii. Je! Unalinganishaje utoaji wa huduma ya kinywa kwa wagonjwa mahututi na huduma zingine za uuguzi?

Appendix III: Observational checklist

ICU nurses' practice on oral care to critically ill patient

Oral care practice	**Done**	**Not Done**
1. Hand washing before oral care		
2. Apply clean gloves		
3. Position a patient in a semi-recumbent		
4. Clean mouth using toothbrush or gauze moistened with mouth wash and water		
5. Rinse mouth with a clean water and swab		
6. Suction secretions as they accumulate, if necessary		
7. Apply water-soluble jelly to patients' lips		
8. Clean equipment and return it to its proper place		
9. Hand washing after oral care		
10. Documentation		
Total score		

Appendix IV: Informed consent form for ICU nurses (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

ID. NO ☐

CONSENT FORM FOR PARTICIPATING IN A RESEARCH STUDY

Hello, greetings! My name is **Agness Lazaro Laizer** I am studying for a Master of Science in Critical care and Trauma at the Muhimbili University of Health and Allied Sciences (MUHAS). I am researching **"*Perceptions and experiences of intensive care unit nurses' on oral care practices to a critically ill patient*"**.

The aim of the Study

This study aims to explore the perceptions and experiences of ICU nurses on oral care practices to critically ill patients at Muhimbili National Hospital.

Procedure

I would like you to participate in this study. You are selected because you are knowledgeable and directly responsible for the subject matter of this study. Interview guides will be given to you and privacy will be maintained as much as possible. The researcher would like to audio record the interview as part of the study. An interviewer will contact you to make some sort of arrangement for a convenient time and day of your choice for the interview. We hope that you will be willing to share your information with the research team. If you have questions about this research, including questions about how to schedule for the interview or about your participation, please do not hesitate to ask or contact the research team at any time.

Confidentiality

All information and issues relating to your participation in the study will be treated confidential, no unauthorized person will have access to your information. The audio recorded will be placed in a safer place and stored until a written copy of the discussion has been created. As soon as this process is complete, the audios will be deleted to enhance research confidentiality. Furthermore, to protect confidentiality, your names will not be used in the written copy of the discussion.

Right to refuse or withdraw

It is your choice to participate in this study. Also, you don't have to talk about anything you don't want to and you may end the interview at any time. However, I encourage you to participate because your views are very important in this study.

Benefits

There are no direct benefits to you from being in the study, however, your participation in this study will provide useful information for improving and implementation truth-telling to cancer patients, as well as reducing the dilemma about telling or not telling the truth to terminally ill cancer patients among healthcare providers. It will stir both healthcare providers and terminally ill cancer patients to use controlled quality of life considerations with medical inputs, to legitimately determine whether particular life-prolonging treatments are optional or obligatory. Your information will help on the reduction of anxiety, tension, and guilt conscious of information denial to terminally ill patients, hence prepare them psychologically and spiritually to face and accept death.

Risks

There will be no harm to you as a result of participation in this study although some questions will be personal which might trigger your emotions, feelings, pains, worries, and despair.

Whom to Contact

In case of any inquiry please contact the principal investigator, Mrs. **Agness Lazaro Laizer** from MUHAS, P. O. BOX 65001, Dar es Salaam, mobile number **0783571230** If you ever have questions about this study you may call, the Chairperson of the (Research and Publications Committee, MUHAS. P.O. Box 65001, Dar es Salaam-Tanzania **255 0222151596**.,

I_____... have read the contents of this form and understand. My questions have been answered. I agree to participate in this study.

Signature of participant_____Date_____.

Signature of researcher/research assistant_____.

Appendix V: Informed consent form for an ICU nurse (Swahili Version)

NAMBA YA FOMU

FOMU YA IDHINI YA KUSHIRIKI KATIKA UTAFITI

Habari, naitwa **Agness Lazaro Laizer** nikisomea shahada ya uzamili katika fani ya Uuuguzi katika Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili (MUHAS). Ninafanya utafiti kuhusu *"**Maoni na uzoefu wa wauguzi wa chumba cha wagonjwa mahututi katitka kutunza kinywa cha mgonjwa mahututi**"*

Lengo la Utafiti

Utafiti huu una lengo la kutafuta mambo ***kuangaza maoni na uzoefu wa wauguzi wa chumba cha wagonjwa mahututi katitka kutunza kinywa cha mgonjwa mahututi***.

Utaratibu

Ningependa ushiriki katika utafiti huu. Umechaguliwa kwa sababu unahusika katika kutoa huduma kwa wagonjwa matuti na mawazo yako yatasaidia uboreshaji wa huduma hii kwa siku za baadae. Watafiti watapenda kuchukua sauti yako ili kuweza kupata vema mazungumzo yako yote, na watawasiliana nawe ili kupanga muda mwafaka kwako wa mahojiano. Tunatumaini utakuwa tayari kushirikiana na watafiti. Endapo utakuwa na maswali kuhusu utafiti huu pamoja na maswali ya namna ya kupanga ushiriki wako, tafadhali usisite kutuuliza ama kuwasiliana na watafiti muda wowote.

Usiri

Taarifa zote za ushiriki wako ni siri na wala hakuna mtu yeyote asiyehusika atakayeruhusiwa kuziona wala kuzifuatilia. Sauti yako itakayochukuliwa itatunzwa sehemu salama hadi hapo nakala ya maandishi itakapotolewa. Mara baada ya kukamilika kwa nakala ya maandishi, sauti yako iliyotunzwa itafutwa ili kutunza usiri wa utafiti. Hata hivyo, majina yako hayatajumuishwa kwenye nakala ya maandishi.

Haki ya kukataa au kujitoa

Ushiriki katika utafiti huu ni wa hiari. Pia hulazimishwi kuongea jambo lolote ambalo usingependa kuliongea. Unaweza kusitisha mahojiano wakati wowote endapo utaona ni vyema kufanya hivyo. Licha ya hayo tungependa ushiriki wako katika utafiti huu kwani maoni yako yana umuhimu mkubwa.

Faida

Hakuna faida za moja kwa moja kwako kutokana na utafiti huu, hata hivyo ushiriki wako katika utafiti huu utasaidia kuwakumbusha watoa huduma kuhusu umuhimu wa kuwaambia ukweli wagonjwa, na hivyo kupunguza utata kwa watoa huduma kuhusu kusema ukweli kwa wagonjwa mahututi wa kansa. Pia itawahamasisha watoa huduma na wagonjwa kutumia njia sahihi na bora za kimatibabu kwa kuzingatia ni aina ipi za huduma ni za lazima au za hiari. Utafiti huu unategemewa kutoa msaada katika kupunguza msongo wa mawazo, wasiwasi na dhamiri ya kuhisi kunyimwa ukweli kwa wagonjwa, na hivi kuwaandaa kisaikolojia na kiroho kukabiliana na kukipokea kifo.

Madhara

Hatutegemei ya kwamba utapata madhara yoyote kwa kushiriki kwako katika utafiti huu ingawa baadhi ya maswali utakayoulizwa ni ya kibinafsi na hivyo yataweza kukuletea utofauti wa kihisia, mawazo, wasiwasi, woga na kujisikia uchungu.

Watu wA kuwasiliana nao

Kama una maswali katika utafiti huu unaweza kuwasiliana na mtafiti mkuu, **Bibi. Agnes Lazaro Laizer** kutoka Chuo Kikuu cha Afya na Sayansi shirikishi Muhimbili, S.L.P. 65001, Dar es Salaam. Nambari yake ya simu ni **0783571230**. Kama utakua na swali lolote kuhusiana na utafiti huu, unaweza kuwasiliana na Mwenyekiti wa kamati ya chuo ya utafiti na machapisho, MUHAS. S.L.P 65001, Dar es Salaam-Tanzania, Tel **255 0222151596**.

Mimi…….....……nimesoma fomu hii ya idhini na nimeielewa. Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Saini ya mshiriki…… Tarehe……

Saini ya mtafiti/ mtafiti msaidizi ……...

Appendix VI: Latter for Requesting Ethical Clearance

Muhimbili University of Health and allied Science
School of Nursing
P.O. Box 65001,
Dar es Salaam
4th March 2021.

The Director of Postgraduate Studies
Muhimbili University of Health and allied Science
P.O. Box 65001,
Dar es Salaam

U.F. S Dean School of Nursing
Muhimbili University of Health and allied Science

U.F. S Head Department of Clinical Nursing
Muhimbili University of Health and allied Science
School of Nursing

U.F. S Research Supervisor,
Muhimbili University of Health and allied Science
School of Nursing

Sir/ Madam

RE: SUBMISSION OF RESEARCH PROPOSAL FOR ETHICAL CLEARANCE.

I am postgraduate student pursuing **M.Sc. Critical care and Trauma** in the School of nursing a Muhimbili University of Health and allied Science.

Following the completion and development of research proposal titled ***Experiences in the provision of oral care to critically ill patients among Intensive Care Unit Nurses at Muhimbili National Hospital, Dar es Salaam, Tanzania***; I kindly submitting the proposal for ethical clearance. Data will be collected by researcher using prepared semi-structured interview guide to obtain the information needed to fulfill the objectives of the study.

I agree to abide with MUHAS research guideline and not to deviate from research study protocols. The budget for the study is two million, four hundred thousand only, Tanzanian currency (Tshs. 2,400,000/=) which will be funded by the Ministry of education, science, and technology, Tanzania

Best Regards

……
Agness Lazaro Laizer (Registration number. **HD/MUH/T.503/2019).**

Appendix VII: Letter for ethical clearance from MUHAS

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR - RESEARCH AND PUBLICATIONS

Ref. No.DA.282/298/01.C/ Date: 22/04/2021

MUHAS-REC-04-2021-565

Agness Lazaro Lazier
Shool of Nursing
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: EXPERIENCES IN THE PROVISION OF ORAL CARE TO CRITICALLY ILL PATIENTS AMONG INTENSIVE CARE UNIT NURSES AT MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM, TANZANIA

Reference is made to the above heading.

I am pleased to inform you that the Chairman 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: 22/04/2021
EXPIRATION DATE OF APPROVAL: 22/04/2022

STUDY DESCRIPTION:
Purpose:
The purpose of this observational cross sectional study is to explore the perceived challenges and experiences of ICU nurses on provision of oral care to critically ill patients 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-%20569.pdf and in the MUHAS archives.

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1038; Direct Line:+255-22-2152489;Telefax:+255-22-2152489;E-mail:drp@muhas.ac.tz;Web:https://www.muhas.ac.tz

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. Bruno Sunguya
Chairman, MUHAS Research and Ethics Committee

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

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1038; Direct Line:+255-22-2152489;Telefax:+255-22-2152489;E-mail:drp@muhas.ac.tz;Web:https://www.muhas.ac.tz

Appendix VIII: Permission letter from MNH.

THE UNITED REPUBLIC OF TANZANI

MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT, GENDER, ELDERLY AND CHILDREN

MUHIMBILI NATIONAL HOSPITAL

In reply please quote;

Ref. No.: MNH/TRCU/Perm/2021/100 **Date: 23rd April, 2021**

Block Manager
ICU
Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH.

Name of Student	**Agness Lazaro Laizer**
Title	**"Experiences in the Provision of Oral Care to Critically Ill Patients Among Intensive Care Unit Nurse at Muhimbili National Hospital".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Dr. Dickson A. Mkoka
Co - Supervisor	Masunga K. Iseselo
Period	23rd April 2021, to 30th July, 2021

Approval has been granted to the above mentioned student to collect data at MNH.

Kindly ensure that the student abide to the ethical principles and other conditions of the research approval.

Sincerely,

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

Reid B. Mchome
Coordinator –Teaching, Research and Consultancy Unit

c.c DNS
c.c **Agness Lazaro Laizer**

Upanga West, Kalenga Street, Plot No. 10480/3, P.O. BOX 65000, Dar es Salaam, Tanzania.
Telephone: +255-22-2151367-9, Telephone: +255-22-2151351-2
Email: info@mnh.or.tz, Website: www.mnh.or.tz

Appendix IX: Introduction letter from MNH.

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

Ref. No. HD/MUH/T.503/2019 23rd April, 2021

EXECUTIVE DIRECTOR,
MUHIMBILI NATIONAL HOSPITAL,
P.O BOX 65000,
DAR ES SALAAM.

Re: INTRODUCTION LETTER

The bearer of this letter is Agness Lazaro Laizer (HD/MUH/T.503/2019), a student at Muhimbili University of Health and Allied Sciences (MUHAS) pursuing MSc. Nursing Critical Care and Trauma.

As part of her studies she intends to do a study titled: **"Experiences In The Provision Of Oral Care To Critically Ill Patients Among Intensive Care Unit Nurses AT Muhimbili National Hospital, Dar Es Salaam, Tanzania".**

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

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

We thank you for your cooperation.

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, School Pharmacy, **MUHAS**
cc: Agness Lazaro Laizer

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