PERCEPTIONS OF NURSES ON CHALLENGES AND OPPORTUNITIES FOR IMPLEMENTING PATIENT CENTERED CARE TO CRITICALLY ILL PATIENTS AT CONSULTANT HOSPITALS IN DAR ES SALAAM, TANZANIA

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"A Dissertation to be submitted in Partial Fulfillment of the requirements for the Degree of MSc. Nursing Critical Care and Trauma of Muhimbili University of Health and Allied Sciences"

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CERTIFICATION

The undersigned certify that she has read and hereby recommend for acceptance of dissertation entitled **Perceptions of Nurses on Challenges and Opportunities for Implementing Patient Centered Care to Critically ill Patients at Consultant Hospitals in Dar es Salaam, Tanzania** in Partial Fulfilment of the requirements for the Degree of MSc. Nursing Critical Care and Trauma of Muhimbili University of Health and Allied Sciences.

Signature..... Date.....
..

Prof Lilian Mselle

(Supervisor)

School of Nursing

Declaration

I, **Grace Alphonce Masawe** declare that the work presented in this dissertation is my original work and it has never been nor will it be presented to any other University for the similar degree.

Signature..... Date.....

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Above all, I thank the Almighty God for health and protection.

Dedication

This work is dedicated to my mother Veronica Masawe, brothers and sisters, my husband and my children Happy, Edna and Ephraim.

ABSTRACT

Background: Patient Centered care (PCC) is a caring approach which advocates partnership in care between health care workers, patients and family. This approach is known worldwide and has shown to improve outcome of both ambulatory and critically ill patients. Despite its importance, empirical literature has evidenced the worldwide problem in implementing PCC to critically ill patients. This study was expected to come up with the challenges and opportunities available in the context of Tanzania with their effect in PCC implementation.

Objective: The general objective of this study was to describe challenges and opportunities for implementing PCC to critically ill patients.

Methodology: The study used analytical cross-sectional design. Proportionate stratified sampling was used to ensure that the sample was representative, that is, nurses from Muhimbili National Hospital (MNH), Muhimbili Orthopaedic Institute (MOI) and Jakaya Kikwete Cardiac Institute (JKCI) were represented proportionally. Simple random sampling was used to select respondents for the study. A sample of 152 nurses was used and this was drawn from a study population comprising a total of 250 nurses. Data was collected using questionnaires and was analyzed using descriptive analysis, Chi-square, bivariate and multivariate logistic regression.

Results: The results showed no significant challenges that hinder implementation of PCC and on the other hand it revealed that family conference/meeting was an available opportunity for PCC implementation with p=0.001, AOR 3.47 (1.34-3.51). It was further revealed that a demographic characteristic, that is, nurses work experience has influence on PCC implementation with p value of 0.027 and AOR 2.26 (1.09-4.67).

Conclusion: This study revealed no significant challenge on the implementation of PCC among nurses in Tanzanian context particularly at three consultant hospitals in Dar es Salaam. It was further revealed that availability of family meetings can significantly enhance PCC implementation. Therefore, for successful implementation of PCC the hospitals' management can use family conference as available opportunity to foster PCC implementation. However, more research needs to be done in the subject area.

ABBREVIATIONS

AOR	Adjusted Odd Ratio
CCU	Coronary Care Unit
CI	Confidence Interval
HDU	High Dependent Unit
ICU	Intensive Care Unit
IOM	Institute of Medicine
JKCI	Jakaya Kikwete Cardiac Institute
KCMC	Kilimanjaro Christian Medical Centre
MNH	Muhimbili National Hospital
MOI	Muhimbili Orthopaedic Institute
NICU	Neonatal Intensive Care Unit
PCC	Patient Centered Care
PICU	Paediatric Intensive Care Unit
USA	United State of America

OPERATION DEFINITIONS AND DEFINITIONS OF KEY TERMS

Patient Centered Care (PCC) means "providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient's values guide all clinical decisions"(A Wolfe, 2001).

Critically ill patients are those patients who are at risk or those with life threatening conditions admitted in Intensive care units at Muhimbili National Hospital, Muhimbili Orthopaedic Institute and Jakaya Kikwete Cardiac Institute who need intense and constant nursing care (Mselle and Msengi, 2018).

Family refers to any person who has a relationship with patient, this can include siblings, friends, guardians, parents and any other relatives (Kokorelias *et al.*, 2019).

Intensive Care Units (ICU) refers as "a distinct geographical entity in which high-level nursing, advanced monitoring and organ support can be offered to improve patient morbidity and mortality"(Cairns, 2018).

Challenges in this study are defined as those attributes that can hinder efforts for PCC implementation at Muhimbili National Hospital and its Institutions in the path of implementing PCC (Nkrumah and Abekah-nkrumah, 2019).

Opportunities are factors that can be advantageous to Muhimbili National Hospital, Muhimbili Orthopaedic Institute and Jakaya Kikwete Cardiac Institute in enhancing the efforts for PCC implementation in ICUs (Nkrumah and Abekah-nkrumah, 2019).

A nurse is a "person who has completed a program of basic, generalized nursing education and is authorized by the appropriate regulatory authority to practice nursing in his/her country"(ICN, 2021).

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CHAPTER ONE: INTRODUCTION

1.1 Background

Patient Centered Care (PCC) is a caring approach which has gained popularity and advocated worldwide to be used in health care settings as it improves patient's outcomes (Kitson *et al.*, 2012; Delaney, 2017; Burns *et al.*, 2018). It is among the six domains of health care quality stipulated by Institute of Medicine (A Wolfe, 2001). The six domains include care that (a) ensure patient safety (b) delivered timely (c) patient centered (d) effective (e) efficient and (f) equitable (A Wolfe, 2001). PCC has been accepted globally because of its benefits to critically ill patients and these will be discussed later within this background. PCC emphasizes the relationship in care between health care workers, patients and family (Berhe, 2019). However, patients who are critically ill cannot participate in their own care, therefore PCC allows family members to act as surrogates and decide in the best interest of patients (Mol *et al.*, 2016). PCC believes that patient and family are equal in terms of care planning and in ensuring that the needs are met (Mol *et al.*, 2016).

In order to ensure PCC is implemented, research by Picker's Institute described eight principles of PCC (Araki, 2019). The principles described by Picker's Institute are similar to those found in *National guideline for safe care standards* –Tanzania (MoHSW, 2014). Such principles are; provision of care that respect patient values, preferences and needs; care that respect the role of family and patient in decision making about care and effective communication (Araki, 2019). This means that, in order to implement PCC successfully nurses need to have the ability to communicate effectively with patients or families of critically ill patients. It's through interactions that nurses can ensure needs of the patients are met and can create a therapeutic relationship with patients or patient-family. Studies suggested that family members of critically ill patients can act on behalf of patients and decide in the best interest of patients (Elie Azoulay , Charles, Joly and Parrot, 2003; Mol *et al.*, 2016; Xyrichis *et al.*, 2019). Other PCC principles are provision of emotional support and physical comfort which means nurses and other health workers have to strive to lessen pain in patients and anxiety or stress in relatives (Araki, 2019). For example, when patients are critically ill and admitted in ICU both patients and relatives become stressed due to ICU environment which is new to them, scaring them with a lot of noises from machines and the fact that not all seriously

ill patient recover, therefore this leads to stress to both patients and relatives (Almaze and Beer, 2017; Jordan, 2018). Accessibility and continuity of care are among the PCC principles which signifies that patients should get all services required to cure their conditions, prevent them from acquiring other infections from hospital or disease complications and promote their health (Araki, 2019). Both patients and families should be assured on continuity of care when patient is transferred from one unit to another or after discharge (Davis, Schoenbaum and Audet, 2020). In short, all these principles should be clearly known, not only to nurses but also to other health professionals and hospital leaders.

Patient centered care (PCC) has been reported to have several benefits for health workers, patients and their relatives (Shelton *et al.*, 2010; Sarah, Mcalvin and Carew-lyons, 2014). Studies have shown majority of critically ill patients cannot talk or participate fully in care due to sedation or their ill condition thus necessitate family members to be involved in care and decide on behalf of their patients (Mitchell and Chaboyer, 2010; Matlakala, 2016). Family involvement is among the principle of PCC and one of its benefit is that they provide important information about their patients which help nurses to provide care that best meet their patient's needs (Sarah, Mcalvin and Carew-lyons, 2014). PCC approach has also shown to improve communication between ICU health workers and families and fostering partnership in care (Shelton *et al.*, 2010). Increase in family and patients satisfaction, decreased ICU health cost and improved mental status of families has also been mentioned as benefits of PCC (Mitchell and Chaboyer, 2010). Another benefit was shown in the study done in USA which indicated that the presence of relatives during care provision gives an opportunity to nurses to educate the relatives about their patients conditions and how to provide care to their patients while at home after discharge (Sara M.Bishop, Mandi D.Walker, 2013).

1.2 Problem statement

Patient Centered Care (PCC) has been reported to be difficult to implement worldwide and even more difficult to implement among critically ill patients (Aro, Pietilä and Vehviläinen-Julkunen, 2012; Jakimowicz and Perry, 2015; Kelleher, 2015). Patients who are critically ill are often not able to talk, this in turn prevents them from actively participating in their own care and hence PCC implementation becomes difficult

(Mitchell and Chaboyer, 2010; Matlakala, 2016). Despite the implementation difficulties, the concept of PCC suggests several principles to ease its implementation. These include respecting patient values and needs, engage family member in decision making about care, promote physical comfort to patients, provide privacy, maintain communication with family members and nurses, provide emotion support to both patients and their families and plan for discharge to ensure continuum of care (Taylor and Odell, 2011; Slatore *et al.*, 2012; Araki, 2019).

The implementation of these activities have been shown to have positive health outcomes (Shelton *et al.*, 2010; Sara M.Bishop, Mandi D.Walker, 2013). However, in actual practice, previous studies have shown that most of the PCC principles were inadequately adhered to. For example, in developed countries, Azoulay et al conducted a survey on stress related morbidity among family members of patients admitted in ICU and found that more than 30% of family members suffered posttraumatic stress syndrome which was contributed by feeling of getting incomplete information and lack of clarity (Azoulay *et al.*, 2003). Another study in Botswana reported weak implementation of PCC whereby the participants of the study expressed receiving inadequate information by health workers regarding severity of their patients' condition, management given to their patients and plan of care after discharge (Senabye, 2018). In addition, counselling sessions to family members of critically ill patients were reported to be unavailable hence families raised it as a need because they help them cope with stressful illness of their patients (Senabye, 2018). Moreover, nurses didn't show compassionate care to patients and their relatives and they didn't share information voluntarily unless asked (Senabye, 2018). Furthermore, a study done in Kenya showed that 21.2% of relatives did not know how to care for their patients after discharge (Maina, Kimani and Omuga, 2018). This implies that majority of families didn't get sufficient information and were not adequately involved in care and hence PCC was not implemented successfully.

A study in Tanzania reported that relatives of critically ill children received inadequate information about conditions of their children and unsuitable words from health care providers (Saria, Mselle and Siceloff, 2019). The study that was done at MNH regarding PCC indicated that health workers did not communicate with family members adequately (Kohi, Obogo and Mselle, 2016). Another study at KCMC showed that

nurses didn't make follow up to patient after administering antipain to see if there is a relief or not and did not use pain assessment scale which is very important to critically ill patients. In addition to that poor documentation of care provided to patients led to little follow up of patient's condition between shifts (Lina Hasselgren and Madeleine Telander Bick, 2010). **Literatures in Tanzania have indicated inadequate implementation of PCC. Therefore there is a need to identify barriers and opportunities for enhancing PCC in Tanzania**. This study therefore seeks to assess challenges and opportunities for implementing PCC to critically ill patients at three consultant hospitals in Dar-es-Salaam, Tanzania.

1.3 Conceptual Framework

The conceptual framework of this study was adapted from the study done in Ghana on Facilitators and barriers of Patient- Centered Care at Organization level (Nkrumah and Abekah-nkrumah, 2019), however some modification was done based on literature review in order to fit the objectives of this study**.** The modifications include addition of indicator variables on measuring challenges like fear of safety of patients, lack of teamwork, lack of staff training on PCC activities; all these were selected from previous empirical studies, (Lloyd, Elkins and Innes, 2018; Maina, Kimani and Omuga, 2018; Hetland *et al.,* 2019) and been added in the current conceptual framework. Addition of variables for assessing opportunities include readiness of nurses to work in partnership, availability of family room, willingness of families to be involve in care, availability of framework and models, availability of research on PCC and availability of stakeholders (Elie Azoulay , Charles, Joly and Parrot, 2003; Ardith Doorenbos, Taryn Lindhorst, Helen Starks, Eugene Aisenberg, 2008; Härter *et al.,* 2017). These indicator variables were not considered by Nkrumah and Abekah-nkrumah. Some indicators that were used in their study were retained in this study. The study by Nkrumah and Abekah-nkrumah ignored individual factors such as nurses or patients' characteristics which may have influence on PCC implementation as their study looked only organizational factors. For example, continuous professional training to nurses especially on PCC activities is considered important because it improves nurses' skills which can help them to offer safe and effective care to meet patient needs (Vennedey *et al.*, 2020). Therefore, in order to get the holistic picture of challenges and opportunities influencing PCC

implementation in the context of Tanzania this study went beyond organizational factors.

Figure 1 below is a conceptual framework; it describes challenges encountered during PCC provision to critically ill patients and opportunities which are available that can help to address the challenges. The direction of the arrow joining challenges and PCC in figure 1 goes anticlockwise which means the challenges hinders efforts for PCC implementation. On the other side, the direction of the arrow which joins opportunities and PCC goes clockwise which signifies alignment with the effort for PCC implementation (Nkrumah and Abekah-nkrumah, 2019).

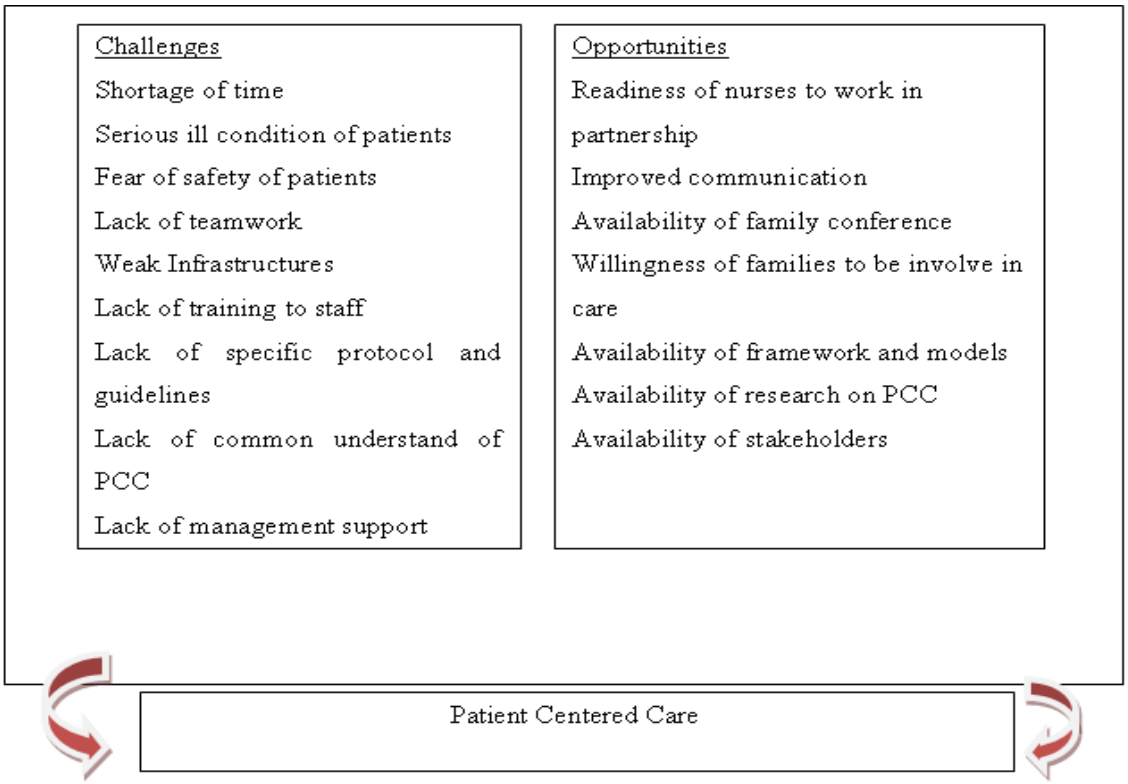

Figure 1: Challenges and Opportunities for PCC Implementation- Conceptual Framework

Source: Adapted from the study on *Facilitators and barriers of Patient- Centered Care at organization level* (Nkrumah and Abekah-nkrumah, 2019).

1.4 Rationale

The findings of this study will provide possible solutions for enhancing PCC implementation by nurses and other health care providers. The hospital management can therefore use the findings from this study to ensure that PCC implementation is successful by learning from the challenges and opportunities that significantly affect implementation of PCC and address them accordingly. The management can also use the findings to set strategies that aim to improve PCC implementation and quality of care of critically ill patients. The results can also be used as a base for other researches and for planning and development of various activities, programmes and guidelines to enhance PCC implementation.

1.5 Research Questions

The following are the research questions that guided this study.

1.5.1 General Research question

What are the nurse's challenges and opportunities for PCC implementation to critically ill patients?

1.5.2 Specific Research questions

1. What are the challenges encountered by nurses during PCC implementation to critically ill patients?
2. What are the opportunities available for nurses to implement PCC to critically ill patients?
3. Is there a relationship between nurses' demographic characteristics (age, work experience, level of education) and PCC implementation?

1.6 General Objective

To describe challenges and opportunities for PCC implementation to critically ill patients

1.6.1 Specific Objectives

1. To determine challenges for PCC implementation to critically ill patients.

2. To examine the available opportunities for PCC implementation to critically ill patients.
3. To assess the association between nurses' demographic characteristics (age, work experience, level of education) and PCC implementation

CHAPTER TWO: LITERATURE REVIEW

2.1 Challenges for implementing PCC to critically Ill patients

Studies show although PCC is currently known worldwide but it is not fully implemented particularly to critically ill patients (Ben Natan, 2017). Some researchers presume that one of the challenges is absence of unified definitions (Sidani and Fox, 2014; Ben Natan, 2017). Some studies reported challenges such as different views between doctors and nurses regarding importance of involving relatives; serious illness of patient that break communication between patients and health providers, lack of support from leaders and shortage of time to involve families (Lloyd, Elkins and Innes, 2018; Hetland *et al.*, 2019). The study in USA shows fear of nurses on the safety of patients because most of the time critically ill patients are surrounded by machines, tubes and lines which are supposed to be cared by trained personnel. If family members allowed to care these patients, safety of patients will decrease e.g. patients may extubate the tubes or pull out the lines (cannular).In addition, presence of stress to families with seriously ill patients also hampers PCC implementation (Hetland *et al.*, 2019). Lack of teamwork, lack of motivation to nurses and training was reported as challenges to PCC in the study done in Iran (Cheraghi *et al.*, 2014).

The challenges were also reported in sub-Saharan countries and these include weak infrastructure, poor information system, lack of space and privacy for patients and their families (Man *et al.*, 2016). In Ghana, the study done by Nkrumah revealed that job description lack PCC responsibilities and unwillingness of families or patients to express mistreatment were among the challenges to PCC implementation (Nkrumah and Abekah-nkrumah, 2019). A study done in Kenya pointed the challenges as lack of guidelines, lack of training on PCC among medical providers and inadequate time to discuss care with family members (Maina, Kimani and Omuga, 2018). In Tanzania, no study documented the challenges which hamper implementation of PCC to critically ill patients, however the needs of the family of critically ill patients and their level of satisfaction in care was identified at MNH which shows PCC is inadequately implemented (Kohi, Obogo and Mselle, 2016). Despite the challenge's health facilities requested nurses to provide quality care, so, identification of the challenges is crucial as it may help in setting strategies to overcome the problems in implementing PCC.

2.2 Opportunities for implementing PCC to critically ill patients

Although implementation of PCC faces difficulties but western countries such as USA, Australia, French and Israel are able to implement PCC due to varieties of opportunities which are present in their countries (ACSQHC, 2011; Azoulay, Chaize and Kentish-barnes, 2014; Härter *et al.*, 2017). This study was not able to obtain articles which directly explore opportunities for PCC implementation to critically ill patients or other chronic conditions. However, opportunities were slightly highlighted in varieties of PCC studies. Such opportunities include willingness of health providers to engage relatives during provision of care to patients (Elie Azoulay , Charles, Joly and Parrot, 2003) though some studies show that not all health providers agree family members to be involved in care (Hetland *et al.*, 2019). Other opportunities include availability of communication course in medical school's curriculum, patient rights law, and consent form where patients and relative sign before procedures (Talya Miron-Shatz, Ofra Golan, Mayer Brezis, 2012).

In Australia the presence of a framework called Australia safety and quality framework which accepts, emphasizes and recognizes PCC as a core for quality health care was mentioned in the study to assist in PCC implementation (ACSQHC, 2010). Another study done in USA show that presence of family conference in the hospital provide opportunity for interaction between health providers and family members where they plan care together, discuss alternative treatments and health worker can clarify doubts raised by families (Ardith Doorenbos, Taryn Lindhorst, Helen Starks, Eugene Aisenberg, 2008; Michelson *et al.*, 2011). In Germany, several organizations are available to advocate PCC and also have funding program and models for PCC implementation (Härter *et al.*, 2017). This means opportunities are available and therefore the responsibility lies to the organization to take advantage of it.

In Africa few studies were documented, for instance, the study done in south Africa shows 84% of nurses in emergency department admit that involvement of families in care of patients is important and 77% reported to have skills to help and support families in care (Almaze and Beer, 2017). This acceptance of the role of families in care signifies readiness of nurses to work in partnership with families to achieve PCC. In Tanzania, the study that was done in KCMC reported that nurses acknowledged the significance of providing detailed information to parents of critically ill children and

their involvement in provision of care (Saria, Mselle and Siceloff, 2019). In addition, presence of various research which are conducted in referral hospitals in Tanzania, example the study that examines the needs of family with critically ill patients and their levels of satisfaction in care (Kohi, Obogo and Mselle, 2016) can be regarded as an opportunity for improvement of PCC implementation.

2.3 Association between Nurses Demographic characteristics and PCC Implementation

According to (Singh *et al.,* 2017) demographic characteristics should not be ignored when talking about PCC implementation. The study in Belgium by (Malfait, Eeckloo and Hecke, 2017) showed age of nurse's had an influence in PCC implementation. Malfait, Eeckloo and Hecke, (2017) argued that older nurses were ready to share their responsibilities with patients. Another study by (Ganz and Yoffe, 2012) showed that older nurses demonstrated more readiness in involving family members in care. Other demographic characteristics such as level of education was shown to influence PCC implementation in the study by (Malfait, Eeckloo and Hecke, 2017).

Therefore, identification of challenges and opportunities for PCC implementation is important as it helps health care facilities to put forward strategies to improve their service provision. Despite that Tanzania is also facing challenges in PCC implementation still there is scanty literature on PCC. Unfortunately, most of studies related to challenges and opportunities for PCC implementation were done in countries other than Tanzania therefore it is not clear whether the findings can also be applicable in the context of Tanzania. In addition, most of the studies that were done adopted qualitative methods (Lloyd, Elkins and Innes, 2018; Maina, Kimani and Omuga, 2018; Hetland *et al.,* 2019; Nkrumah and Abekah-nkrumah, 2019; Saria, Mselle and Siceloff, 2019) which limit generalization of findings and cannot show the magnitude of the phenomena. This study adopted quantitative method which favours generalization of findings to the population. It also helped to determine the magnitude of challenges and explore available opportunities for PCC implementation both in the context of Tanzania.

CHAPTER THREE: METHODOLOGY

3.1 Study Design

The **analytical cross-sectional study design** using a quantitative approach was used to assess challenges and opportunities for PCC implementation. The cross-sectional design entails collecting data at a single point of time, it is easy to execute, inexpensive and useful in evaluation of multiple associations (Phyllis G.Supino, 2012)**.** The quantitative approach helped in quantifying data and analyzing relationships between variables in order to support or reject the alternative claim (Sousa *et al.,* 2007). Therefore, the rationale for using this study design was based on its usefulness in explaining relationships among variables, determining the magnitude of the phenomena and that the findings obtained can be generalized to the general population (Gelo, Braakmann and Benetka, 2008).

3.2 Study Area

The study was conducted in Dar-es Salaam at three consultant hospitals namely Muhimbili National Hospital, Muhimbili Orthopaedic Institute and Jakaya Kikwete Cardiac Institute.

Muhimbili National Hospital (MNH) is a national referral hospital located in Upanga ward, Ilala district. It has one branch called Muhimbili National Hospital-Mloganzila which is located at Kibamba ward, Ubungo district. MNH at Upanga ward has three Intensive Care Units (ICUs) i.e. ICU1 (Medical ICU), ICU2 (Surgical ICU) and Maternity ICU. There are three High Dependent Units (HDUs) which are both in medical, maternity and surgical departments. Also, there are one Paediatric ICU (PICU) and one Neonatal ICU (NICU). The ICUs in medical department has 9 beds and HDU has 4 beds. In surgical department, the ICU has 18 beds and HDU has 5 beds. Maternity ICU has 9 beds, PICU have 12 beds and NICU has 20 beds. Muhimbili National Hospital-Mloganzila has 17 beds in Medical ICU (MICU) and 48 beds in NICU. The reason for choosing MNH was that it receives referrals of critically ill patients from hospitals all over the country.

Muhimbili Orthopaedic Institute (MOI) is an institute located in MNH. The institute receives neurosurgery, orthopaedics and trauma referrals from MNH and other hospitals

all over the country. It has one ICU and one HDU. Total number of beds at MOI ICU and HDU are 18 and 16 respectively.

Jakaya Kikwete Cardiac Institute (JKCI) is a National specialized Cardiac Institute located in MNH. It also receives referrals of cardiac patients from all over the country. It has one ICU for caring surgical patients who are critically ill, one HDU and one Coronary Care Unit (CCU). ICU has 9 beds, CCU has 8 beds and HDU has 5 beds. Therefore, both units (ICUs, HDUs and CCU and sites (MNH, MOI and JKCI) receive referrals and manage critically ill patients.

3.3 Study Population

The study population can be described as the total elements (people, records, schools, clinics) in which a researcher is interested to learn and generalize his/her research findings (Burke Johnson, 2014). In this study the population were all nurses working in ICUs, HDUs and CCU from all three consultant hospitals. The reason for selecting nurses was because nurses spend more time with patients more than other cadres. The study believes that they can play a big role in implementing PCC.

3.4 Sample Size

The sample size for the study was calculated based on the total number of nurses in all critical units (i.e. the population of the study). The formula adopted in determining sample size was introduced by Krejcie and Morgan (Krejcie and Morgan, 1970). The Krejcie and Morgan formula is used for determining sample size for finite population. The reason for choosing this formula was because the population of this study was finite (population was known, i.e. 250 nurses).

$$S = \frac{Z^2 NP(1-P)}{D^2(N-1) + Z^2 P(1-P)}$$

Where

S= Required Sample Size

Z = Level of confidence (1.96 for 95% confidence level)

N= Population size

p = Expected proportion; (previous study on the same topic not found), therefore, expected proportion (assumed to be 0.5 (50%) as this give maximum sample size

D = Degree of accuracy (5%), expressed as proportion (0.05)

Therefore

$$S=\frac{1.96^2*250*0.5(1-0.5)}{0.05^2(250-1)+1.96^2*0.5(1-0.5)} = 151.6836 \approx 152$$

Basing on the formula the required sample size for the study was 152 nurses. The calculations conform to the Krejcie and Morgan (1970) table attached to the Appendix III that shows sample size for given population.

3.5 Sampling Design and Procedures

Sampling is "the process of drawing a sample from a population" (Burke Johnson, 2014). The stratified sampling method was used in this study to make sure that all nurses from different care units (i.e., ICUs, HDUs and CCU) were represented in the sample. The reason for using this type of sampling was that it helped to get a more representative sample as each stratum was represented adequately and hence more reliable findings (Taherdoost, 2016).

The sampling frame in this study was 250 nurses working at ICUs, HDUs and CCU as at 28 Jan 2021 from MNH, MOI and JKCI. However, this study had more than one sampling frame in order to allow the proportioning of sample size at the level of institute and department. Sampling frame consists of a list of items from which the sample is to be drawn (Taherdoost, 2016). This sampling frame was considered suitable for the study because it comprised nurses from multiple areas that are providing care to critically ill patients at the hospital and this helped the study to get the required data that may sufficiently explain the challenges and opportunities that influence implementation of PCC. Since this study comprised of nurses from three consultant hospitals and different care units then proportionate stratified sampling was used and proportional sample size for each Institution and each care was calculated. Proportional sample size for each Institution was calculated by dividing total number of nurses (from all critical care units)

in particular institution divide by total number of nurses (from all critical care units) in all institution's times the overall sample size of the study which was 152 (Table 1).

Table 1: Proportional Sample Size of each Consultant Hospitals

S/N	Name of Unit	Institution	Total Nurses	Calculation of Proportion sample size of each Institution	Proportion sample size of each Institution
1.	ICU+HDU+NICU+PICU+MAR-ICU+MAR-HDU	MNH	112	(112/250) *152=68.09	68 (Nurses)
2.	ICU+NICU	MNH-MLOGANZILA	42	(42/250) *152=25.5	26(Nurses)
3.	ICU+HDU	MOI	43	(43/250) *152=26.14	26 (Nurses)
4.	ICU+HDU+CCU	JKCI	53	(53/250) *152=32.22	32 (Nurses)
Total			**250**		**152 Nurses**

After proportioning the sample size of each Institution, then within the institution sample size was proportioned in each unit (i.e. ICUs, HDUs and CCU based on determined proportion sample size of each Institution by allocating it depending on their number of nurses (Table 2).

Table 2: Proportional Sample Size of Each Critical Care Unit

S/N	Name of Unit	MNH		MOI		JKCI		MNH-MLOGANZILA	
		Total Nurses	Proportion sample size Calculation	Total Nurses	Proportion sample size Calculation	Total Nurses	Proportion sample size Calculation	Total Nurses	Proportion sample size Calculation
1	ICU	-	-	23	(23/43) *26=14	26	(26/53) *32=16	29	(29/42) *26=18
	MICU	19	(19/112) *68=12	-	-	-	-	-	-
	SUCI	27	(27/112) *68=16	-	-	-	-	-	-
	Mart-ICU	13	(13/112) *68=8	-	-	-	-	-	-
2	HDU	-	-	20	(20/43) *34=12	14	(14/53) *32=8	-	-
	Mart-HDU	12	(12/112) *68=7	-	-	-	-	-	-
3	NICU	17	(17/112) *68=10	-	-	-	-	13	(13/42) *26=8
4	PICU	24	(24/112) *68=15	-	-	-	-	-	-
5	CCU	-	-	-		13	(13/53) *32=8	-	-
	Total	**112**	**68 (Nurses)**	**43**	**26(Nurses)**	**53(Nurses)**	**32 (Nurses)**	**42**	**26(Nurses)**

*Mart-ICU=means maternity ICU Mart-HDU=means Maternity HDU

After having the proportion of nurses per each unit, simple random sampling was applied to select nurses for the study from each unit by using lottery method. The rationale of using this type of probability sampling is that it allows generalization of the findings to all units (i.e., ICUs, HDUs and CCU) in the hospital. Simple random sampling also, gives every person in the population equal chance of being selected and therefore it reduces chances of bias (Taherdoost, 2016).

3.6 Inclusion criteria

Inclusion criteria can be defined as features the population possess that are considered to be important for them to be selected to participate in the study (Patino and Ferreira, 2018). The inclusion criterion for this study was:

- Nurses working in the ICUs, CCU, HDUs consistently with **at least six months working experience** and who provided written consent to participate in the study.

3.7 Exclusion criteria

Exclusion criteria can be defined as "features of the potential study participants who meet the inclusion criteria but present with additional characteristics that could interfere with the success of the study or increase their risk for unfavourable outcomes" (Patino and Ferreira, 2018) . Therefore, the exclusion criteria for this study were:

- Nurses not consistently working in ICUs, HDUs and CCU such as those assigned to work in these units for few days to cover the shortage but most of their time they work in other clinics.
- Nurses working in ICUs, HDUs and CCU but not providing direct care to patients such as nurses managers.

3.8 Variables

The dependent variable in this study was Patient Centered Care (PCC) and was measured by categorical scale whereby the respondents were asked questions on whether PCC is implemented or not implemented at their present workplaces. The independent variables were challenges and opportunities and Likert scale was used to develop measurement variables. The 5-point Likert scale that was used include; 5. Strongly agree, 4. Agree, 3. Neutral, 2 Disagree and 1. Strongly disagree

Table 3: Variables, Indicators and Measurement scales

	Main Variable	Indicator Variable	Measurement Scale
Dependent Variable	**Patient Centered Care (PCC)**	**Yes or No**	**Dichotomous scale**
Independent Variables	**Challenges**	**Time, severity of illness, fear of safety, teamwork, infrastructure, training, managerial support, information**	**A 5-point Likert scale**
	Opportunities	**Readiness to partnership, improved communication, family conference, willingness of involvement, framework and models, research availability, shift handover, stakeholders**	**A 5-point Likert scale**

3.9 Data Collection

3.9.1 Data Collection tool and procedure

Data collection was done using structured self-administered questionnaire (Appendix I) which was in English language. It was in English language because the researcher believed that all nurses were trained in English so they understood. The questionnaire included demographic questions and questions which investigated challenges and opportunities for PCC implementation.

The researcher went to the respective units for self-introduction and explained the aim of the study. Then the questionnaires were distributed to all selected nurses after morning report when many nurses were available. The participants were requested to fill the

questionnaires at their own time so as not to interfere with their ward activities. The completed questionnaires were collected and immediately checked for completeness and those questionnaires which were found to have missing information the researcher returned to participants for completion. Therefore, out of 152 questionnaires distributed the researcher managed to get 150 which were completely filled.

3.9.2 Validity and Reliability

Validity refers to the extent the instrument or test measure what it aims to measure (Bowling, 2014). There are different forms of validity such as Content Validity, criterion, construct and face validity. This study used Content Validity and face validity. According to Surucu & Maslakci (Sürücü, 2020), content validity considers whether or not the items on a given instrument accurately measure the phenomena it claims to measure. Face validity refers to 'investigator's subjective assessment of the presentation and relevance of questionnaires"(Bowling, 2014). Therefore, to ensure content and face validity was achieved a pilot study of survey instrument was done. The minimum number of people recommended for pilot study is 5-10 people (Burke Johnson, 2014). In this study, ten colleagues were requested to fill the questionnaires then the discussion was held after they have completed filling the questionnaires. Items which were not clear were removed and some items were modified so that they can be understood by the participants in a consistent way. The participants of the pilot study were not included in the actual study and the filled pilot questionnaires were not included in the analysis.

Reliability describes the degree to which particular test or data collection tool (e.g. Questionnaires) will produce same results at different occasions (Phyllis G.Supino, 2012; Bowling, 2014). **In order to ensure reliability, this study used Cronbach's Alpha to calculate internal reliability of the items included in the questionnaires. This was done during pilot study using Statistical Package for the Social Sciences (SPSS) software of which the Cronbach's alpha for the challenges (11 items) were 0.789 and for opportunities (7 items) were 0.683**. This implies that the instrument was reliable. According to (Tavakol and Dennick, 2011), acceptable value of Cronbach's Alpha range from 0.70-0.95.

3.10 Data Analysis

After collecting data and the returned questionnaires checked for quality control then data coding was done and thereafter the data were entered into IBM SPSS version 20. Data cleaning was done after completing data entry. Since 5-point Likert scale was used during data collection therefore prior to analysis, Strongly Agree and Agree were collapsed into a single category "Agree", Strongly disagree and disagree collapsed into category "Disagree" and Neutral remained as it was. Thereafter, descriptive analysis was done to profile and gain understanding of various nurses' characteristics such as gender, age, work experiences, working department and education level and the results were presented in frequency and percentage. Descriptive analysis helped to give summary of the information about the sample which is studied (Feroze Kaliyadan and VinayKulkarni, 2019).

Inferential analysis was done by using Chi-square test to identify challenges and opportunities for PCC implementation to critically ill patient, with p value of less or equal to 0.05. Those variables which showed significant associations in Chi square were then entered into bivariate analysis to find out whether statistical association exists between two variables. Variables with $P < 0.2$ in the bivariate analysis were considered significant and tested again by using Multivariate analysis. The reason for performing multivariate logistic regression was to adjust for possible confounders. The p value of less or equal to 0.05 in multivariate analysis was considered significant. The findings of bivariate analysis were reported in the form of Crude Odd Ratio (COR), 95% confidence interval and p value while multivariate analysis findings were reported in the form of Adjusted Odd Ratio (AOR), 95% confidence interval and p value.

3.11 Ethical Consideration

Ethical clearance was obtained from MUHAS-IRB before data collection (Appendix IV). The permission to conduct study at MNH, MOI, MNH-Mloganzila and JKCI was obtained from the management of MNH and each Institution. Informed consent (verbal or written) was obtained from participants after providing them adequate information about the study. Other ethical issues that were taken into consideration during data collection include assuring the participants that their names would not appear in the questionnaires instead identification (ID) number would be used. In addition,

participants were assured that confidentiality of data collected would be maintained and would be used for academic purposes only. Also, they were informed about the voluntary nature of participation and the right to withdraw partially or completely from the process.

CHAPTER FOUR: RESULTS

The study involved nurses working in ICUs (medical, surgical, cardiac, maternity, neonatal, paediatric), HDUs and CCU from all three consultant hospitals. A total of 152 questionnaires were distributed to nurses and 150 out of that were returned and these represent a response rate of 99 %.

4.1 Demographic Characteristic of Respondents

Out of 150 respondents who participated in this study, 95 (63.3%) were female, 75 (50%) were aged 30 - 40 years, and 74 (49%) had diploma in Nursing, neither of the respondent had Certificate. Work experience of participants varied from less than 1 year to above 10 years but majority of respondents 86 (57%) had work experience of 1year to less than 5 years. Respondents of this study work in ICUs, HDUs and CCU at MNH, JKCI and MOI. None of the respondents hold a managerial position (Table 4).

Table 4: **Social demographic characteristics of respondents** (n=150)

Variable	Frequency (N=150)	Percentage (%)	Variable	Frequency (N=150)	Percentage (%)
Gender			**Working department**		
Male	55	36.67	ICU-MOI	14	9.33
Female	95	63.33	ICU-JKCI	15	10
Age group			MICU-MNH	12	8
20-30	59	39.33	ICU-Mloganzila	18	12
30-40	75	50	NICU-MNH	10	6.67
40-50	15	10	NICU-Mloganzila	8	5.33
50-60	1	0.67	PICU	14	9.33
Education level			Maternity-ICU	8	5.33
Diploma	74	49.33	HDU-MOI	12	8
Bachelor degree	71	47.33	HDU-JKCI	8	5.33
Masters	5	3.33	CCU	8	5.33
Working experience			SICU-MNH	16	10.67
Less than 1 year	33	22	Maternity-HDU	7	4.67
1 to less than 5 years	86	57.33	**Current position**		
5 to less than 10 years	20	13.33	Non-management	150	100
10 to above 10 years	11	7.33			

4.2 Challenges for Implementation of PCC

Challenges for implementation of PCC were analyzed using Chi square and presented in Table 5. Out of 150 respondents, 98 (65%) stated that PCC is implemented in their working place. Some challenges were agreed upon by majority of respondents who said yes PCC is being implemented. 76 (66.7%) respondents agreed that severity of patients was a challenge, 63 (60.6%) agreed that fear of safety of patients was a challenge, 51 (57.3%) agreed that inadequate facilities was a challenge, 40 (53.3%) agreed lack of specific guidelines for PCC implementation in itself was a challenge, 41 (55%) agreed lack of common understanding about PCC among staff proves to be a challenge in its implementation, 42 (59%) agreed lack of managerial support was a challenge, 45 (59%)

agreed lack of nurses training on PCC was a challenge, 49 (60.5%) agreed lack of sufficient information about PCC concept and 50 (61%) agreed lack of follow up and monitoring on PCC implementation by nurse managers/leaders was what poses challenge in its implementation. On the other hand, of the 98 respondents who said yes there was implementation of PCC taking place, 64 (68.8%) disagreed that lack of cooperation was a challenge for PCC implementation and 45 (71%) disagreed that time constraints was a challenge for PCC implementation. However, as indicated in Table 5, variables which showed statistically significant were insufficient time (p=0.032), inadequate facilities (p=0.041), lack of guidelines (p=0.004) and lack of common understanding (p=0.019).

Table 5: Challenges for Implementation of PCC

		PCC Implementation			
Variables	**Categories**	**Yes**	**No**	**Total**	**P Value**
Insufficient time	Disagree	45(71.43)	18(28.57)	63	0.032*
	Neutral	15(83.33)	3(16.67)	18	
	Agree	38(55.07)	31(44.93)	69	
Severity of patients	Disagree	16(66.67)	8(33.33)	24	0.508
	Neutral	6(50.00)	6(50.00)	12	
	Agree	76(66.67)	38(33.33)	114	
Fear of safety of patients	Disagree	24(82.76)	5(17.24)	29	0.085
	Neutral	11(64.71)	6(35.29)	17	
	Agree	63(60.58)	41(39.42)	104	
Lack of cooperation among nurses	Disagree	64(68.82)	29(31.18)	93	0.518
	Neutral	13(59.09)	9(40.91)	22	
	Agree	21(60.00)	14(40.00)	35	
Inadequate facilities	Disagree	33(78.57)	9(21.43)	42	0.041
	Neutral	14(73.68)	5(26.32)	19	
	Agree	51(57.30)	38(42.70)	89	
Lack of guidelines	Disagree	41(82.00)	9(18.00)	50	0.004
	Neutral	17(68.00)	8(32.00)	25	
	Agree	40(53.33)	35(46.67)	75	
Lack of common understanding on PCC	Disagree	40(80.00)	10(20.00)	50	0.019
	Neutral	17(65.38)	9(34.62)	26	
	Agree	41(55.41)	33(44.59)	74	
Lack of managerial support	Disagree	41(75.93)	13(24.07)	54	0.123
	Neutral	15(60.00)	10(40.00)	25	
	Agree	42(59.15)	29(40.85)	71	
Lack of nurse's training on PCC	Disagree	40(78.43)	11(21.57)	51	0.052
	Neutral	13(56.52)	10(43.48)	23	
	Agree	45(59.21)	31(40.79)	76	
Lack of information about PCC concept	Disagree	39(76.47)	12(23.53)	51	0.111
	Neutral	10(55.56)	8(44.44)	18	
	Agree	49(60.49)	32(39.51)	81	
Lack of follow up on PCC implementation	Disagree	37(72.55)	14(27.45)	51	0.394
	Neutral	11(64.71)	6(35.29)	17	
	Agree	50(60.98)	32(39.02)	82	

*Figures are number and percent. P value with * means Fisher exact test*

4.3 Opportunities for PCC implementation

After analysing data which asked about the available opportunities using Chi square, it was found that, out of the 98 (65%) respondents who said yes that PCC was

implemented, 67 (67%) agreed that on job training offered by hospital management helped nurses to improve their communication with patients and their families. Other opportunities which the respondents agreed upon as being opportunities were as follows; Of 98 respondents, 59 (76.62%) agreed family conference as an opportunity for PCC implementation, 79 (68.10%) agreed that willingness of family to be involved in care of their sick relative as an opportunity, 68 (68%) agreed on availability of Quality Care framework which emphasize and recognize PCC as a core for quality health care, 66 (68.75%) agreed on availability of research on PCC issues and 85 (65.38%) agreed that the system of shift hand over was available at workplace and ensured continuity of care. On the other hand, 36 (57.14%) disagreed on the availability of stakeholders who funds PCC activities. Out of 8 opportunities indicator variables only family conference/meeting showed statistical significance, p=0.01 (Table 6).

Table 6: Opportunities for PCC Implementation

Variable	Categories	PCC Implementation		Total	P Value
		Yes	No		
		N=98(%)	N=52(%)		
On job training	Disagree	17(56.67)	13(43.33)	30	0.519
	Neutral	14(70.00)	6(30.00)	20	
	Agree	67(67.00)	33(33.00)	100	
Family conference/meeting	Disagree	23(51.11)	22(48.89)	45	0.01
	Neutral	16(57.14)	12(42.86)	28	
	Agree	59(76.62)	18(23.38)	77	
Willingness of family to participate in care	Disagree	10(71.43)	4(28.57)	14	0.123
	Neutral	9(45.00)	11(55.00)	20	
	Agree	79(68.10)	37(31.90)	116	
Availability of quality care framework	Disagree	13(59.09)	9(40.91)	22	0.62
	Neutral	17(60.71)	11(39.29)	28	
	Agree	68(68.00)	32(32.00)	100	
Availability of Research	Disagree	18(54.55)	15(45.45)	33	0.332
	Neutral	14(66.67)	7(33.33)	21	
	Agree	66(68.75)	30(31.25)	96	
Availability of Stakeholders	Disagree	36(57.14)	27(42.86)	63	0.198
	Neutral	31(70.45)	13(29.55)	44	
	Agree	31(72.09)	12(27.91)	43	
Availability of Shift hand over	Disagree	6(66.67)	3(33.33)	9	1.000*
	Neutral	7(63.64)	4(36.36)	11	
	Agree	85(65.38)	45(34.62)	130	

*Figures are number and percent. P value with * means Fisher exact test*

4.4 Association between social demographic characteristics and PCC Implementation

Of the 98 respondents who said yes that PCC was implemented, 89 (69.5%) agreed that work experience of nurses had an influence in PCC implementation. Regarding education level, out of the 98 respondents, 78 (66%) agreed that nurse's level of education was important in implementation of PCC. Out of the 98 respondents, 42

(65.6%) disagreed that age was a factor that could influence PCC implementation. In determining association between demographic variables and PCC implementation by using chi square, it was found that only work experience had statistically significant association with PCC implementation (p=0.003). This result was interpreted by using Fisher exact test because some of cells had expected cells counts of less than 5 (Table 7).

Table 7: Association between social demographic characteristics and PCC Implementation

		PCC Implementation			
Variables	**Categories**	**Yes**	**No**	**Total**	**P Value**
		N=98(%)	**N=52(%)**		
Work experience	Disagree	7(63.64)	4(36.36)	11	0.003*
	Neutral	2(18.18)	9(81.82)	11	
	Agree	89(69.53)	39(30.47)	128	
Level of education	Disagree	11(55.00)	9(45.00)	20	0.548*
	Neutral	9(75.00)	3(25.00)	12	
	Agree	78(66.10)	40(33.90)	118	
Age group	Disagree	42(65.63)	22(34.38)	64	0.935
	Neutral	17(68.00)	8(32.00)	25	
	Agree	39(63.93)	22(36.67)	61	

*Figures are N (%). P value with * means Fisher exact test.*

4.5 Bivariate and Multivariate Analysis

Bivariate and Multivariate analysis was done to find out whether association exist between challenges, opportunities and PCC implementation. The results are shown in Table 8 and 9.

Table 8: Bivariate Analysis of Challenges and Opportunities for PCC implementation

Variable	COR (95%CI)	P Value
Work experience		
Agree	1	1
Disagree	0.77(0.21-2.77)	0.686
Neutral	0.10(0.02-0.47)	0.004
Insufficient time		
Agree	1	1
Disagree	2.04(0.98-4.21)	0.054
Neutral	4.08(1.08-15.38)	0.038
Fear of safety of patients		
Agree	1	1
Disagree	3.12(1.10-8.84)	0.032
Neutral	1.19(0.40-3.48)	0.746
Inadequate facilities		
Agree	1	1
Disagree	2.73(1.17-6.38)	0.02
Neutral	2.09(0.69-6.29)	0.192
Lack of guidelines		
Agree	1	1
Disagree	3.99(1.69-9.34)	0.001
Neutral	1.89(0.71-4.83)	0.203
Lack of common understanding on PCC		
Agree	1	1
Disagree	3.21(1,40-7.38)	0.006
Neutral	1.52(0.60-3.84)	0.377
Lack of managerial support		
Agree	1	1
Disagree	2.17(0.99-4.76)	0.051
Neutral	1.03(0.40-2.62)	0.941

Lack of nurse's training on PCC		
Agree	1	1
Disagree	2.50(1.11-5.62)	0.026
Neutral	0.90(0.34-2.30)	0.819
Lack of information about PCC concept		
Agree	1	1
Disagree	2.12(0.96-4.65)	0.06
Neutral	0.81(0.29-2.28)	0.7
Family conference/meeting		
Agree	1	1
Disagree	0.32(0.14-0.70)	0.004
Neutral	0.40(0.16-1.02)	0.054
Willingness of family to participate		
Agree	1	1
Disagree	1.17(0.34-3.97)	0.8
Neutral	0.38(0.15-1.00)	0.051
Availability of stakeholders		
Disagree	1	1
Neutral	1.78(0.79-4.05)	0.163
Agree	1.93(0.84-4.45)	0.119

Note: *COR = Crude odds Ratio.*

The results depicted in Table 8 above showed variables which analysed using bivariate analysis. Family conference showed statistically significant association with PCC implementation.

Table 9: Multivariate Logistic Regression Analysis of Challenges and Opportunities for PCC implementation

Variables	AOR (95%CI)	P Value
Work experience	2.26 (1.09-4.67)	0.027
Challenges		
Insufficient time	0.71 (0.45-1.11)	0.139
Fear of safety of patients	0.52 (0.28-0.96)	0.039
Inadequate facilities	0.79 (0.46-1.35)	0.405
Lack of guidelines	0.55 (0.33-0.90)	0.019
Lack of common understanding on PCC	0.58 (0.30-1.13)	0.115
Lack of managerial support	1.24(0.69-2.22)	0.468
Lack of nurse's training on PCC	0.85 (0.49-1.49)	0.583
Lack of information about PCC concept	1.36 (0.73-2.52)	0.323
Opportunities		
Family conference/meeting	3.47 (1.34-3.51)	0.001
Willingness of family	0.8 (0.38-1.75)	0.615
Stakeholders	1.16 (0.64-2.09)	0.614

AOR=Adjusted Odd Ratio.

The results depicted in Table 9 indicate that family conference was 3 times as likely to enhance PCC implementation [AOR 3.47, 95 % CI (1.34-3.51) and p value of 0.001].Work experience of nurses showed 2.26 times as likely to influence PCC implementation AOR 2.26 95 % CI (1.09-4.67) and p value of 0.027. Challenges such as lack of management support and lack of information about PCC concept showed AOR of more than 1 which means they have an effect on PCC but were not statistically significant.

CHAPTER FIVE: DISCUSSION

5.1 Discussion

This study aimed to determine challenges and opportunities for implementation of PCC to critically ill patients. Furthermore, it assessed association between Social Demographic characteristic and PCC Implementation. Previous studies (Cheraghi *et al.*, 2014; Lloyd, Elkins and Innes, 2018) showed that there are challenges during PCC implementation and they also highlighted some of enablers for PCC implementation though not in the context of Tanzania.

The results of this study revealed that PCC is implemented in all three consultant hospitals (i.e. MNH, MOI and JKCI) but nurses faced challenges during implementation particularly to critically ill patients. During initial analysis (by using chi square), it was found that insufficient time, fear of safety of patients, inadequate facilities and lack of guidelines were challenges that hindered nurses in successful implementation of PCC and they showed statistically significant association with PCC implementation. Surprisingly, when tested in multivariate analysis and adjusted for possible confounders, it was found that no indicator variable showed statistical significance. This finding differ from other scholars (Cheraghi *et al.*, 2014; Maina, Kimani and Omuga, 2018; Kiwanuka *et al.*, 2019) who indicated that lack of specific guidelines and fear of safety of patients were the main challenges for PCC implementation. On the other hand, study by (Lloyd, Elkins and Innes, 2018; Hetland *et al.*, 2019) revealed that inadequate facilities, insufficient time and lack of support from management as challenges in implementing PCC. Although the current study didn't come up with statistically significant challenges but the challenges that were included in the study have been commonly faced by nurses especially those working in low resources settings (Man *et al.*, 2016) . This necessitates more research to be done in various settings in the subject area.

The results of this study also revealed that there are opportunities which nurses can utilize to foster PCC implementation. The opportunity which was highlighted by the results of this study was the availability of family meetings or conference. This finding was consistence with the study by (Ardith Doorenbos, Taryn Lindhorst, Helen Starks, Eugene Aisenberg, 2008) which indicated presence of family conference as an avenue for exchange of information of patient's status between families of critically ill patients

and health care workers. The study by (Joshi, 2013) described family meetings as "useful for discussing patient status and goal of care". In addition, various studies have shown families of critically ill patients need to be given detailed information about treatment options, changes of their patient's conditions, diagnosis and prognosis (Munyiginya and Brysiewicz, 2014; Kohi, Obogo and Mselle, 2016; Maina, Kimani and Omuga, 2018). This can only be achieved if health workers hold a meeting with families. Generally, this meeting helps to achieve some components of PCC such as: (a) Emotion support and lessening of anxiety and fear to patients and their families (b) Family involvement (c) Improvement of communication with families in ICU and addressing patients needs (d) provision of information, education & communication (Joshi, 2013; Flora Tzelepis, Robert W Sanson, Alison C Zuccz, 2015; Boss, Donohue and Larson, 2017; Araki, 2019).

This study went further to assess whether there was an association between demographic characteristic and PCC Implementation. It was found that social demographic characteristics such as level of education and age were not significantly associated with PCC implementation. Regarding the level of education, the finding is consistent with the study by (Ganz and Yoffe, 2012) which showed that education level of the participants were not significantly associated with PCC implementation. On the other hand, (Ganz and Yoffe, 2012; Alhalal, Laila and Alanazi, 2020) findings revealed that age had an association with PCC implementation. This finding differs from the results of this current study whereby nurses perceived no relationship between age of nurses and PCC implementation. The only demographic variable which showed significant association with PCC implementation was work experience. Nurses who have worked for many years normally can cope well with challenges that can be encountered when providing care to critically ill patients as they have gained more skills throughout their nursing career. This finding differs from the results by (Malfait, Eeckloo and Hecke, 2017) who indicated that work experience had no significant relationship with patient involvement in care which is an important component in PCC implementation.

5.2 Study Limitation and Mitigation

Since this study used self-administered questionnaires and at the same time comprised with questions related to nurse's practices and management supports, social desirability bias might have been introduced. For example, the responses of majority of nurses with diploma level education regarding issues related directly to their practices or managerial support in PCC implementation were different from the responses from nurses with degrees. It seems they responded in such a way that hospital management would not look bad or nurse's practices would not look bad.

Mitigation

To mitigate the limitation;

The researcher created a good rapport with participants so as to build trust and provided adequate information about the purposes of the study i.e. the study was for academic purposes only. The researcher kept on reminding the respondents that the data which was collected was truly confidential and their names would not be included in the study. These provided a sense of safety to participants and hence became free to answer the questions honestly.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The results of this study have provided a basic understanding of challenges and opportunities for implementing PCC in the context of Tanzania. PCC as an indicator of quality services is implemented to critically ill patients in all three consultant hospitals. The findings of the study indicate no significant challenges on PCC implementation to the respective consultant hospitals in Dar es Salaam, Tanzania. Despite that the study revealed insignificant challenges, the hospitals' management need not to ignore them as collectively insignificant challenges can contribute in affecting PCC implementation. On the other hand, the issue of nurses' attitudes needs to be investigated as it may contribute to inadequate implementation of PCC which this study didn't consider. Family meeting as an opportunity was revealed by the study that if used effectively can help nurses to meet patients' needs and increase the possibility of reducing anxieties and fear to patients and their families. Therefore, for successful implementation of PCC, there is a need for hospitals' management to address the challenges whether significant or insignificant and use the available opportunity to foster PCC implementation.

6.2 Recommendations

Based on the findings of this study the following recommendations are made

- Hospitals' management should make use of the available opportunity to foster PCC implementation.
- Nurse Managers should make use of those nurses with many years of work experience to mentor junior nurses regarding PCC implementation.
- More research should be done regarding challenges for PCC implementation using other study design and perhaps with large sample size and in other settings, or study to be done on nurses' attitudes towards PCC implementation to critically ill patients.

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APPENDICES

Appendix I: Questionnaire for Nurses

Dear Respondent,

You have been selected to participate in this study. The title of the study is Perceptions of Nurses on Challenges And Opportunities for implementing Patient Centered Care to Critically Ill Patients at Consultant Hospitals in Dar Es Salaam, Tanzania. The main purpose of the study is to investigate the challenges and opportunities for implementing PCC in critically ill patients. You are kindly requested to answer all the questions as carefully as possible. All answers remain anonymous and confidential. The information on the questionnaire will be used for academic purposes only. Do not indicate your name.

Grace A. Masawe–Postgraduate Student
MUHAS
Email: masawe33@gmail.com
Tel: 0746091404.

Please choose an appropriate answer by putting a tick in the brackets.

1) What is your gender? Male [ ] Female [ ]	2) What is your working Department) ICU-MOI [ ] ICU-JKCI [ ] ICU-MNH [ ] NICU-MOI [ ] NICU-MNH [ ]
3) What is your age? 20 - 30 years [ ] 30 - 40 years [ ] 40 - 50 years [ ] 50 - 60 years [ ] Over 60 years [ ]	4) What is your highest education level attained? Certificate [ ] Diploma [ ] Bachelor degree [ ] Masters [ ]
5) How many years have you worked at critically ill units? Less than 1 year [ ] 1 to less than 5 years [ ] 5 to less than 10 years [ ] 10 to above 10 years [ ]	6) What is your current position? Non-management [ ] Management [ ]

Please put a tick in the bracket for the appropriate answer.

7) Do you think Patient Centred Care (PCC) to critically ill patients is implemented at your workplace?

Yes [ ] No [ ]

8) Please read careful the following statements and indicate your level of agreement or disagreement by putting a tick in the box basing on the following scale;

5= strongly agree, 4=Agree, 3= Neutral, 2= Disagree and 1= strongly disagree

Demographic characteristics					
Work experience of nurses on providing care is important in implementation of PCC	1	2	3	4	5
Nurses level of education is vital in implementation of PCC	1	2	3	4	5
The age of the nurse can have an influence in PCC implementation	1	2	3	4	5
Challenges					
There is always insuffient time when I am providing care to critically ill patients at my workplace hence difficult to implement PCC	1	2	3	4	5
Severity of critically ill patients influence PCC implementation	1	2	3	4	5
I always fear the safety of critically ill patients when family members allowed to provide care	1	2	3	4	5
There is lack of cooperation among nurses in implementation of PCC	1	2	3	4	5
There is inadequate facilities (such as equipments, rooms) at the workplace hence difficult to implement PCC	1	2	3	4	5
There is lack of specific defined protocols and guidelines for provision of PCC at my work place	1	2	3	4	5
There is a lack of common understanding of PCC among staff and this	1	2	3	4	5

makes PCC implementation difficult.					
There is lack of managerial support in implementation of PCC	1	2	3	4	5
There is lack of trained nurses in PCC	1	2	3	4	5
There is lack of sufficient information about the concept of PCC	1	2	3	4	5
There is lack of follow up and monitoring on PCC implementation by nurse managers/leaders	1	2	3	4	5
Opportunities					
Hospital management offer on job training on customer service to improve communication of nurses with patients and their relatives	1	2	3	4	5
Availability of family conferences/meetings has enabled me to improve care to critically ill patients and hence achieve PCC	1	2	3	4	5
Families of critically ill patients are willing to be involved in care of their sick relative	1	2	3	4	5
Availability of quality care framework at my workplace which accept, emphasize and recognize PCC as a core for quality health care has assisted in PCC implementation	1	2	3	4	5
Availability of research on PCC that is done in my workplace has helped me to improve my care to critically ill patients	1	2	3	4	5
Availability of stakeholders which Fund PCC implementation are available at my workplace	1	2	3	4	5
The current system of nurse to nurse bedsides shift handover report provide adequate information about patients and this help to ensure continuity of care	1	2	3	4	5

Kiambatisho I: Maswali kwa Wauguzi

Mpendwa mtoa Taarifa,

Umechaguliwa kushiriki katika utafiti huu. Kichwa cha utafiti ni Mtazamo wa wauguz kuhusu Changamoto na fursa katika utoaji huduma kwa wagonjwa mahtuti kwa kuzingatia mahitaji ya mgonjwa,heshima, utu na ushirikishwaji wa mgonjwa au ndugu katika maamuzi ya matibabu katika hospitali tatu za kitafaifa za rufaa Dares-Salaam, Tanzania. Kusudi kuu la utafiti ni kuchunguza changamoto na fursa zilizopo za utekelezaji wa utaratibu wa utoaji huduma kwa wagonjwa mahtuti unao zingatia mahitaji ya mgonjwa.Unaombwa kujibu maswali yote kwa uangalifu iwezekanavyo. Majibu yote hubaki bila kujulikana ni siri. Maelezo yatakayopatikana kupitia dodoso hili yatatumika kwa madhumuni ya kitaaluma tu. Usiandike jina lako.

Grace A. Masawe–Mwanafunzi wa Shahada ya Uzamili

MUHAS

Email: masawe33@gmail.com

Tel: 0746091404.

Tafadhali chagua jibu linalofaa kwa kuweka alama √ kwenye mabano.

1) Jinsia yako ni ipi? Kiume [ ] Kike [ ]	2) Kitengo chako unachofanya kazi ni kipi? ICU-MOI [ ] ICU-JKCI [ ] ICU-MNH [ ] NICU-MOI [ ] NICU-MNH [ ]
3) Umri wako ni upi? Miaka 20 - 30 [ ] Miaka 30 - 40 [ ] Miaka 40 - 50 [ ] Miaka 50 - 60 [ ] Zaidi ya Miaka 60 [ ]	4) Je! Kiwango chako cha elimu ya juu ulichofikia ni kipi? Cheti [ ] Stashahada [ ] Shahada [ ] Shahada ya uzamili[ ]
5)Umefanya kazi katika vitengo vya wagonjwa mahututi kwa miaka mingapi? Chini ya Mwaka 1 [ ] Mwaka 1 na chini ya Miaka 5 [ ] Miaka 5 na chini ya Miaka 10 [ ] Miaka 10 na Zaidi ya Miaka 10 [ ]	6) Cheo cha kazi? Mtumishi wa kawaida si mtawala [ ] Mtawala [ ]

Tafadhali weka alama kwenye mabano√ kwa jibu linalofaa

7) Je unafikiri mfumo wa utoaji huduma kwa wagonjwa mahtuti kwa kuzingatia mahitaji ya mgonjwa, heshima, utu na ushirikishwaji wa mgonjwa au ndugu katika maamuzi ya matibabu unatekelezwa kwa ufanisi katika eneo lako la kazi?

Ndiyo [ ] Hapana [ ]

8) Tafadhali soma kwa uangalifu taarifa zifuatazo na uonyeshe kiwango chako cha makubaliano au kutokubaliana kwa kuweka alama kwenye sanduku kwa msingi unaofuata;

5= Nakubali Sana, 4= Nakubali, 3= Si upande wowote, 2= Sikubaliani na 1= Sikubaliani

kabisa

Demografia					
Uzoefu wa kazi wa wauguzi kwenye uchangiaji huduma unaleta matokeo chanja katika kutoa huduma kwa kuzingatia utu,heshima, mahitaji ya mgonjwa na ushirikishaji ndugu na mgonjwa katika maamuzi ya matibabu	1	2	3	4	5
Kiwango cha elimu cha wauguzi ni muhimu katika katika kutoa huduma kwa kuzingatia utu,heshima, mahitaji ya mgonjwa na ushirikishaji ndugu na mgonjwa katika maamuzi ya matibabu	1	2	3	4	5
Umri wa muuguzi unaweza kuwa na ushawishi katika utekelezaji wa PCC	1	2	3	4	5
Changamoto					
Kila mara ninapotoa huduma kwa wagonjwa mahtuti muda huwa hautoshi ili kuweza kushirikisha mgonjwa au ndugu zake katika maamuzi pamoja na matibabu	1	2	3	4	5
Hali mbaya wanayokuwa nayo wagonjwa mahtuti hufanya utoaji huduma kwa kuzingatia matakwa ya mgonjwa na ushirikishaji wa ndugu katika kufanya maamuzi kutotekelezeka	1	2	3	4	5

Huwa naogopa usalama wa wagonjwa mahututi iwapo wanafamilia wataruhusiwa kutoa huduma	1	2	3	4	5
Kuna ukosefu wa ushirikiano kati ya wauguzi katika utekelezaji wa PCC	1	2	3	4	5
Kuna ukosefu wa vifaa vya kutosha (kama vifaa, vyumba) mahali pa kazi kwa hivyo ni ngumu kutekeleza PCC	1	2	3	4	5
Kuna ukosefu wa protokali maalum na miongozo ya utoaji wa huduma zenye kuheshimu utu na mahitaji ya mgonjwa (PCC) katika mahali pa kazi hivyo zinasababisha ugumu wa utekelezaji wa PCC	1	2	3	4	5
Hakuna uelewa wa pamoja wa kuhusu "PCC"kati ya wafanyakazi na hii husabaisha utekelezaji wake kuwa mgumu	1	2	3	4	5
Kuna ukosefu wa ushirikiano kutoka kwa viongozi katika utekelezaji PCC	1	2	3	4	5
Kuna ukosefu wa wauguzi waliopata mafunzo kuhusu PCC	1	2	3	4	5
Kuna ukosefu wa maelekezo ya kutosha juu ya dhana ya PCC	1	2	3	4	5
Kuna ukosefu wa usimamizi na ufuatiliaji kutoka kwa viongozi wa wauguzi kwenye utekelezaji wa PCC	1	2	3	4	5
Fursa					
Uongozi wa hospitali hutoa juu ya mafunzo kwa wauguzi ya huduma kwa wateja ili kuboresha mawasiliano ya wauguzi na wagonjwa na ndugu zao	1	2	3	4	5
Uwepo wa mikutano ya familia na watoa huduma (family conference) kumeniwezesha kuboresha utoaji huduma kwa wagonjwa mahututi na kwa hivyo kufanikiwa kwa utekelezaji wa "PCC"	1	2	3	4	5
Familia za wagonjwa mahututi wako tayari kushiriki katika utunzaji wa jamaa yao mgonjwa	1	2	3	4	5

Upatikanaji wa mfumo bora (quality care framework) katika eneo langu la kazi ambao unakubali, unasisitiza na kutambua "PCC" kama msingi wa huduma bora za afya umesaidia kufanikiwa kwa utoaji huduma bora kwa wagonjwa mahututi wenye kuzingatia utu,heshima na ushirikishaji ndugu na mgonjwa katika maamuzi ya matibabu	1	2	3	4	5
Uwepo wa tafiti zinazohusu "PCC" ambazo zinafanywa mahali pangu pa kazi zimenisaidia kuboresha utoaji wangu huduma kwa wagonjwa mahututi	1	2	3	4	5
Upatikanaji wa wadau ambao wanafadhili utoaji huduma bora kwa wagonjwa mahututi wenye kuzingatia utu,heshima na ushirikishaji ndugu na mgonjwa katika maamuzi ya matibabu umesaidia kufanikiwa utekelezaji wa "PCC".	1	2	3	4	5
Mfumo wa sasa wa utoaji ripoti ya makabidhiano ya wagonjwa kitanda kwa kitanda wakati wauguzi wakibadilishana zamu, umesaidia kupata habari za kutosha juu ya wagonjwa na kuhakikisha wagonjwa wanapata huduma endelevu (continuity of care)	1	2	3	4	5
Asante					

PCC ni kifupi cha *Patient Centered Care*;Maana yake ni utoaji huduma za afya kwa wagonjwa kwa kuzingatia utu,heshima na ushirikishwaji mgonjwa au ndugu yake katika kumhudumia na katika kufanya maamuzi juu ya matibabu kwa kushirikiana na watumishi wa afya.

Appendix II: Informed Consent Form (English Version):

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

ID NO.....

Greetings,

My names are Grace Alphonce Masawe, a postgraduate student in Critical Care and Trauma Nursing. I am conducting a research study on Patient Centered Care (PCC). This form gives you important information, once you understand the information in this form and agree to take part in the study, please signs at the bottom of the form.

Study Title: Perceptions of Nurses on Challenges and Opportunities for implementing Patient Centered Care to Critically Ill Patients at Consultant Hospitals in Dar Es Salaam, Tanzania.

Researcher: Grace Alphonce Masawe, Nursing Officer

Purpose of this study*:* To investigate challenges and opportunities of PCC implementation in critically ill patients. The findings of this study will help the management to ensure that PCC implementation is successful by paying more attention to those challenges and opportunities that have significant effect in PCC and hence improve quality of care to critically ill patients.

Who can take part in this study? All nurses working in ICU at Muhimbili National Hospital, Muhimbili Orthopaedic Institute, and Jakaya Kikwete Cardiac Institute.

What will happen in this study? If you agree to be part of this study, you will be given a questionnaire to fill. The Questionnaire will be collected after you have filled it in.

Are there any risks of taking part in this study? There are no risks to you for participating in this study.

Are there any benefits of taking part in this study? You may not receive any personal benefits from being in this study. However, the results will be disseminated to the management of Muhimbili National Hospital, Muhimbili Orthopaedic Institute, and Jakaya Kikwete Cardiac Institute so as to improve Patient Centered Care in all ICUs.

Are there any costs or fees for entering this study? There will be no costs to you.

Is there confidentiality in this research project? The information obtained in this study from you will be confidential and will be used for academic purposes and for the improvement of services.

Consent to participate

Your signature means you have read the above information, understood and you are willingly to participate in this study.

Signature of Participant **Date**

_____ _____

Contact information

If you need any clarification about this study or you have any question, you may contact the following:

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Kiambatisho II: Fomu ya Idhini ya kushiriki katika utafiti (Toleo la Kiswahili):

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

Na.Fomu.....

Salamu, naitwa Grace Alphonce Masawe, mwanafunzi wa uzamili katika uuguzi wa wagonjwa mahututi na majeruhi.Ninafanya utafiti juu ya utoaji huduma kwa wagonjwa mahtuti unaozingatia mahitaji ya mgonjwa,heshima, utu na ushirikishwaji wa mgonjwa au ndugu katika maamuzi ya matibabu. Fomu hii inakupa maelezo muhimu kuhusu utafiti huu na mara tu utakapoelewa habari zilizopo katika fomu hii na kukubali kushiriki katika utafiti ,tafadhali saini chini ya fomu.

Kichwa cha Somo: Mtazamo wa wauguzi kuhusu Changamoto na fursa katika utoaji huduma kwa wagonjwa mahtuti kwa kuzingatia mahitaji ya mgonjwa,heshima, utu na ushirikishwaji wa mgonjwa au ndugu katika maamuzi ya matibabu katika hospitali tatu za kitafaifa za rufaa Dares-Salaam, Tanzania.

Mtafiti: Grace Alphonce Masawe, Afisa Muuguzi

Kusudi la utafiti huu: Utafiti huu utaainisha changamoto na fursa zilizopo za utekelezaji wa utaratibu wa utoaji huduma kwa wagonjwa mahtuti unao zingatia mahitaji ya mgonjwa,heshima, utu na ushirikishwaji wa mgonjwa au ndugu katika maamuzi ya matibabu. Utafiti huu utapendekeza suluhisho ili kuboresha huduma. Usimamizi wa hospitali utatumia matokeo ya utafiti huu ili kuhakikisha mfumo huu wa utoaji huduma unafanikiwa kwa kuzitatua changamoto zinazoathiri utoaji huo wa huduma na kutumia fursa zilizopo ili kuboresha huduma za wagonjwa mahututi. Kwa kuongezea, matokeo pia yatawasilishwa kwa watunga sera ili kuweka mipango na kuandaa miongozo mbalimbali.

Ni nani anayeweza kushiriki katika utafiti huu? Wauguzi wote wanaofanya kazi katika ICU za MOI, Mloganzila, JKCI na MNH.

Ni nini kitatokea katika utafiti huu? Unapokubali kuwa sehemu ya utafiti huu, utapewa dodoso la kujaza na litakusanywa baadaye baada ya kulijaza.

Je! Kuna hatari yoyote ya kushiriki katika utafiti huu? Hakuna hatari yoyote kwa wewe kushiriki katika utafiti huu.

Je! Kuna faida yoyote ya kushiriki katika utafiti huu? Unaweza usipate faida yoyote ya kibinafsi kwa kuwa katika utafiti huu. Walakini, matokeo yatasambazwa kwa uongozi wa ICU za MOI, Mloganzila, JKCI na MNH na yataweza kutumika katika kuboresha huduma za wagonjwa mahtuti.

Je! Kuna gharama au ada yoyote ya kushiriki kwenye utafiti huu? Hakutakuwa na gharama kwako kwa kushiriki katika utafiti huu.

Je! Kuna usiri katika huu wa utafiti? Habari itakayopatikana katika utafiti huu kutoka kwako itakuwa ya siri na itatumika kwa madhumuni ya kitaaluma tu.

Idhini ya kushiriki

Saini yako hapa chini inamaanisha kuwa umesoma maelezo yaliyopo hapo juu, umeelewa na uko tayari kwa hiari yako kushiriki katika utafiti huu.

Saini ya Mshiriki **Tarehe**

....

Mawasiliano:

Endapo utakuwa na maswali ya kuuliza kuhusu utafiti huu, unaweza kuwasiliana nasi kupitia anuani tajwa hapa chini:

Grace Alphonce Masawe (mtafiti)
Muhimbili University of Health and Allied Sciences,
School of Nursing, P.O. BOX 65004, Dar es Salaam
Simu: **0746091404;** Barua Pepe: masawe33@gmail.com

Prof Lillian T.Mselle (study supervisor)
Associate Professor, Department of Clinical Nursing, MUHAS
P.Box 65427, Dar-es-Salaam
Simu +255 717 565 610/+255 768 565 610; Barua Pepe: nakutz@yahoo.com

Director of Research and Publication,
Muhimbili University of Health and Allied Sciences,
P.O. BOX 65001, Dar es Salaam
Simu **+255-022-215-2489,** Barua Pepe**:drp@muhas.ac.tz**

Asante kwa kukubali kushiriki katika utafiti.

Appendix III: Sample Size Table

Table 10: Table for Determining Sample Size from a given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: “N” is population size “S” is sample size.

Source: Krejcie and Morgan (1970)

Appendix IV-Ethical clearance

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: 13/05/2021

MUHAS-REC-05-2021-607

Grace Alphonce Masawe,
MSc. in Critical Care and Trauma,
School of Nursing,
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: Challenges and Opportunities for Implementing Patient Centered Care to Critically ill Patients: A case of Nurses at Three Consultant Hospitals in 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: 13/05/2021
EXPIRATION DATE OF APPROVAL: 12/05/2022

STUDY DESCRIPTION:
Purpose:
The purpose of this descriptive quantitative cross sectional study is to investigate challenges and opportunities for implementing PCC to critically ill patients.

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-%20606.pdf and in the MUHAS archives.

The PI is required to:

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

Dr. Bruno Sunguya
Chairman, MUHAS Research and Ethics Committee

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

Cc: Director of Postgraduate Studies

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 V: Permission Letter from MNH-Upanga

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/2021/125 Date: 18th May, 2021

Block Manager
- Mwaisela
- General ICU
- NPC – I
- Maternity – I

Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH.

Name of Student	**Grace Alphonce**
Title	**"Challenges and Opportunities for Implementing Patient Cantered Care to Critically Ill patients: A Case of Nurses at Three Consultant Hospital In Dar es Salaa."**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Prof. Lilian Mselle
Co - Supervisor	Mr. Masunga K. Iseselo
Period	18th May 2021, to 30th August, 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,

HEAD 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 **Grace Alphonce**

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 VI:Permission Letter from JKCI

UNITED REPUBLIC OF TANZANIA
MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT, GENDER, ELDERLY AND CHILDREN

JAKAYA KIKWETE CARDIAC INSTITUTE (JKCI)

JAKAYA KIKWETE CARDIAC INSTITUTE

In reply, please quote; **Ref:** AB.123/307/01D/62 Date: 19/05/2021

Grace Aiphonce Masawe
Msc. in Critical Care and Trauma
School of Nursing
MUHAS

RE: PERMISSION TO CONDUCT RESEARCH

Reference is made to your letter. Your request to conduct a study titled, " Challenges and Opportunities for Implementing Patient Centred Care to Critically ill Patients: A case of Nurses at Three Consultant Hospitals in Dar es Salaam, Tanzania". Has been granted institutional permission.

This letter serves as an official document that permits you to collect your data at JKCI for the prescribed duration as per your ethical clearance. It is our sincere hope that you will abide to the rules and regulations of good clinical practice and the declaration of Helsinki. We wish you the very best and hope that your stay at JKCI will be fruitful.

You are required to provide a copy of your final project upon completion and submit it to Department of Research and Training JKCI.

In addition, your local contact person at JKCI will be Sr. Salma Wibonela, (lease with her before you start your data collection).

Best Regards,

JAKAYA KIKWETE CARDIAC INSTITUTE P.O. Box 65141 Dar-es-Salaam JKCI

Dr.Naizihiwa MAJANI
Head of Research Training & Consultancy
CC: DIRECTOR NURSING SERVICES

Jakaya Kikwete Cardiac Institute (JKCI); Upanga East Plot No. 1048, Kalenga Street, Malik Road, P. O. Box 65141 - Dar es Salaam; Telephone Number + 255 -22- 2152392 Email:info@jkci.or.tz, Website: ww.jkci.or.tz.

Appendix VII:Permission Letter from MNH-Mloganzila

THE UNITED REPUBLIC OF TANZANIA

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

MUHIMBILI NATIONAL HOSPITAL MLOGANZILA

In reply please quote;

Ref. No.: JA.294/428/01/182 **Date: 26/05/2021**

Ass. Director of Nurse Services
Ag. Block Manager Emergency Services and Critical Care
MNH-Mloganzila

RE: PERMISSION TO COLLECT DATA AT MNH - MLOGANZILA

Name of Principal Investigator	Ms. Grace Alphonce Massawe
Title	"Challenges and Opportunities for Implementing Patient Centered Care to Critically ill Patients: A Case of Nurse at Three Consultant Hospitals in Dar es Salaam, Tanzania"
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Prof. Lilian Mselle
Period	2 months

Permission has been granted to **Ms. Grace Alphonce Massawe** to collect data for the above study.

Please ensure that the researcher abide to the ethical principle and other condition.

Muhimbili National Hospital - Mloganzila Directorate of Human Resource Management and Training For Director P. O. Box 65000 Dar-es-Salaam

Miriam K. Herman
FOR: EXECUTIVE DIRECTOR
MUHIMBILI NATIONAL HOSPITAL - MLOGANZILA

c.c. Ms. Grace Alphonce Massawe

Mloganzila, Kibamba – Ubungo, P.O. BOX 65000, Dar es Salaam, Tanzania.
Telephone: +255-22-222215715, Telephone: +255-22-2215701,
Email: info@Mloganzila.or.tz, Website: www.mnh.or.tz

Appendix VIII:Permission Letter from MOI

MOI
MUHIMBILI ORTHOPAEDIC INSTITUTE

P.O. Box 65474; DAR ES SALAAM, TANZANIA, MUHIMBILI COMPLEX
Executive Director: +255-022-2153359
General lines: +255-022-2151298/2152937/2152938
FAX: +255-022-2151744
E-Mail: info@moi.ac.tz
Website: www.moi.ac.tz
OFFERING SERVICES IN ORTHOPAEDICS, NEUROSURGERY AND TRAUMATOLOGY

AB. 145/146/02/97 **19th May, 2021**

Director Postgraduate studies
MUHAS
P O BOX 65001
DAR ES SALAAM

1. RE: REQUEST TO CONDUCT A RESEARCH

2. Reference is made to your letter dated 17th May, 2021 with reference No: **HD/MUH/T.496/2019** regarding the above subject matter.

3. On behalf of the Management I would like to official inform you that your request for Ms. Grace Alphonce Massawe to collect data titled Challenges and Opportunities for Implementing Patient Centered Care to Critically Ill Patients: A case of Nurses at Three consultant Hospitals in Dar es Salaam at **MOI** has been approved. Therefore very kindly you are requested to inform her to start data collections.

4. On the arrival you should come and see the undersigned person for more information.

5. it's my hope that you will extend enough cooperation regarding this matter.

With regards,

Abdallah Mbuguni
For: Executive Director

Cc: Dean School of Nursing, MUHAS