FACTORS INFLUENCINMG UTILIZATION OF MINISTRY OF HEALTH GUIDELINE ON MANAGEMENT OF PREECLAMPSIA AND ECLAMPSIA AT PUBLIC HEALTH FACILITIES IN MIGORI COUNTY, KENYA

SELESTINE OWOKO ODANGA

A THESIS/PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN NURSING OF MOUNT KENYA UNIVERSITY

NOVEMBER 2024

DECLARATION AND APPROVAL

This my original work and has not been presented for a ward of diploma or conferment of a degree in any institution

Signature

Date 2nd November 2024

SELESTINE OWOKO ODANGA Registration no MSCN/2015/21281

This research thesis has been submitted for examination our approval as supervisors

Dr Rosemary Okova

School of Nursing

Mount Kenya University Kigali

Okova. 06/11/2024.

Signature Date

5/11/2024

Dr Nancy Maingi

Dedan Kimathi University of Technology, Kenya

DEDICATION

Dedicated to my late parents Joseph and Anna Odanga, my husband Dr. Ambayo, my children Joseph, Teresa, Lena, Allan, Curtis, and grandchildren Shanna and Imora.

ACKNOWLEDGEMENTS

Firstly, I extend my heartfelt gratitude to the Almighty for His grace, without which this achievement would not have been possible. I am deeply grateful to my mentors, Dr. Rosemary Okova and Dr. Nancy Maingi, for their invaluable guidance throughout this thesis. My appreciation goes to Dr. Njoroge, Dean of the School of Nursing at Mount Kenya University, Mr. Mutie, Coordinator of Postgraduate Studies, and Mr. Dan Muya, former Coordinator, for their support and a conducive learning environment.

Special thanks to the Migori County Health Management team for authorizing data collection and to the staff of the seven public health facilities, especially the participating nurses. I also thank Mr. Joab Radack for reviewing my work, Mr. Micheal Odhiambo, Mr. Albert Telet, and Mr. Nouah Umidha for their assistance in data collection.

ABSTRACT

Preeclampsia and eclampsia contribute to 9 to 26 percent of maternal deaths globally. In Kenya preeclampsia and eclampsia is the second direct cause of maternal mortality. The main objective of this study was to ascertain factors influencing utilization of Ministry of Health guideline among nurses in the prevention and management of preeclampsia and eclampsia in public health facilities Migori county, Kenya. The study was guided by the following specific objectives: to determine the level of adherence of Ministry of health guideline in the management preeclampsia and eclampsia among the nurses working in public health facilities Migori County, Kenya ,to Identify the nurse related factors that influence the utilization of the Ministry of Health guideline among nurses working in public health facilities in Migori County Kenya and identify the health facility related factors that influence the utilization of the Ministry of Health guideline among nurses working in public health facilities Migori County Kenya . The study area was Migori County targeting 7 public health facilities drawn from each Sub County in Migori county of Kenya. With regards to methodology, the study adopted the use of a descriptive cross -sectional research design and the Cochran (1977) formula was used to calculate the sample size. Through random sampling 71 respondent nurses were targeted to participate in the study, drawn from maternal and child health care clinics and maternity wards from the target public health facilities. Purposive sampling technique was used in the selection of the public facilities and specifically in perusing the clients' records. Data collection was done through a self-administered data collection tool that is the questionnaire, a check list was also used to conduct facility assessment and audit of the patients' records, in addition, focus group discussion was done. To ensure reliability pre-testing of 10 percent of the questionnaires was done at Uriri Sub County Hospital. The data analysis was done using computer statistical package SPSS version 28 and the presentation of findings was done in form of frequency tables and charts. The findings of the study revealed that male respondents were 12(16.9%), female59(83.1%) the age of the respondents ranged between 25-58 years with the mean age of 8.4. The only socio-demographic variable that had significant value was the period one worked in a unit p(0.001). Adherence level was at 30 % with mean value of adherence of 56.7 though 97.1% of the respondents self-reported using the ministry of health guidelines for preeclampsia and eclampsia. The nurse related factors on management preeclampsia and eclampsia showed that 21(30%) of the respondents had adequate knowledge, while 50 (70%) did not have good knowledge. The comprehensive knowledge of the nurse had a significant value of p (0.000). The overall perception of the nurses on the ministry of health guideline for preeclampsia and eclampsia management was good based on its clarity and ease to follow with a statistical value p (0.005). In conclusion majority of the respondents had poor knowledge and their adherence was low towards the guideline. Most of the health facilities did not have the guideline. The recommendations for this study are that guideline should made available and displayed in maternity and maternal and child health care clinic. The frequent continuous medical education and training for nurses will enhance their knowledge and practice. Further studies to be conducted on the use of ministry of health guideline for preeclampsia and eclampsia among all the health care providers within these public health facilities.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

ACOG	American College of Obstetrics and Gynecologists
AFIDEP	African Institute for Development Policy
ANC	Antenatal Care
EBP	Evidence-Based Practice
KDHS	Kenya demographic and health survey
KPHC	Kenya population and Housing census
MCHIP	Maternal and child integrated program
MgSO4	Magnesium sulphate
MOH	Ministry of health
PE/E	Preeclampsia and Eclampsia
RMNCH	Reproductive, Maternal Newborn, and Child Health
SOMANZ	Society of Obstetric Medicine of Australia and New Zealand
SPSS	Statistical Package for Social Science
UNFPA	United Nation Population Fund
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

This chapter delves into the foundation of the study, pinpointing the problem of study, highlighting the study objectives, and the specific research objectives as well as questions. It further highlights the rationale for the study, proposes a hypothesis, discusses potential limitations, delineates the study's scope, and clarifies the operational definition of essential terms.

1.1 Background of the Study

Preeclampsia is among the hypertensive disorders that occur in pregnancy and is defined asa multi-system disorder whose etiology, pathogenesis and pathophysiology are poorly understood (Kenny *et al.* 2016). It is a global health problem contributing to 26 % of maternal deaths (Ndwiga *et al.*,2018). There are two distinct types of preeclampsia, i.e. an early onset of pre-eclampsia which occurs before 33 weeks of gestation and the late onset of the disease which occurs from 34 weeks or after delivery (Ndwiga *et al.,*2018).

On its risk, Eclampsia is a life-threatening condition that is characterized by convulsions and may lead to maternal and fetal death or preterm births (Townsend, O'Brien & Khail 2016). Maternal morbidity and mortality remain a big concern in the world today despite many efforts to lower it. Preeclampsia and eclampsia contribute to about 9% to 26 % of maternal deaths worldwide. Maternal deaths due to preeclampsia is about 99% in developing countries with Sub-Saharan Africa accounting for over two - thirds for these deaths (WHO,2019).

In Kenya preeclampsia and eclampsia (PE/E) is the second leading direct cause of maternal deaths accounting for 20% of maternal mortality (MOH ,2017).

Prevention of maternal and neonatal deaths can be achieved through the provision of effective antenatal care, that promotes early detection and treatment of pregnancy-related complications such as PE/E (von Dadelszen & Mugee, 2017). Evidence-based practice enhances best practices in the management of PE/E because the clinical guidelines aid in the diagnosis and treatment of the PE/E thus leading to the improvement of quality of care and better outcomes for pregnant women. (Bazzano, *et al.,* 2016). Therefore, from the foregoing, the role of the clinical guidelines is to promote Evidence- Based Clinical Practice (EBP). The EPB is used as a tool for augmenting the clinician's decisions in the management of PE/E (MOH, 2016). It influences the practice of the nurse positively which enables them to shift from traditional to scientific based practice. It also does help fill the gap between theories and practice, resulting in reduced costs, improved patient outcome and serves as a standard for quality patient care. It is worth noting that nurses more often than not, don't regularly utilize EBP due to various challenges such as inadequate skills, lack of training lack of knowledge and lack of resources (Aynalem, Yazew & Gebrie ,2021). An example of such Clinical guidelines is the World Health Organization (WHO), recommendations for prevention and management of PE/E which was developed in 2011. The purpose of this guideline was to help in standardizing the care for the management of PE/E as per each country's specific national and local context (WHO, 2014).

In 2012, the Kenyan government, through the Ministry of Medical Services and in conjunction with the Ministry of Public Health and Sanitation, adopted the WHO guidelines regarding the prevention and management of PE/E. Consequently, they formulated a book titled "National guideline for Quality Obstetric and Perinatal care," encompassing aspects of maternal and newborn health. The aim of the MOH PE/E guideline was to standardize and improve care to women with PE/E with emphasis on identification, diagnosis, treatment and management of PE/E. The guideline was disseminated to all the health facilities in the Republic of Kenya and has been in use since 2012. Most of the skilled health providers in Kenya have been trained on the guideline (MOH, 2012).

Studies have shown that the utilization of clinical guidelines for PE/E management among health care providers globally to be low (Garti *et al*,.2020). In Kenya studies have shown that the utilization of the guidelines among nurses for midwifery and nursing care to be at 8% (Hysio,Arega,&Markos 2018*).* Also, other previous studies in Kenya have shown poor adherence to the guideline for PE/E guideline among the health care providers (Zemedu *et al* ,.2020:Muchiri ,2016).

There no record of any previous studies on the use of the guideline for PE/E among the health providers in Migori County, Kenya

1.2 Statement of the Problem

Globally hypertensive disorders associated with pregnancy such as preeclampsia have been ranked as the second leading cause of maternal mortality, therefore health care workers especially nurses and midwives who play a very important role in the management of PE/E and as such are required to have adequate knowledge on how to

diagnose and manage PE/E. A survey conducted in 29 countries of Africa, Asia, Latin America and Middle East showed that 20% of women with severe maternal outcomes (maternal deaths or near miss death) had PE/E (Vousden *et al.,* 2019). Preeclampsia (PE/E) is ranked as the second leading direct contributor of maternal mortality in Kenya, subsequent only to postpartum hemorrhage. The vulnerability of women in low to middle-income nations, like Kenya, is starkly highlighted by the fact that they are 300 times more prone to fatalities from eclampsia as compared to their counterparts in affluent countries (Ishaku *et al.,* 2017). In Kenya, it is estimated that the maternal mortality ratio stands at an alarming figure of 342 deaths per 100,000 live births, while the neonatal mortality rate is pegged at 22 per 1000 live births. Such metrics are notably elevated, given the WHO's classification of a maternal mortality ratio exceeding 300 per 100,000 live births as high (WHO, 2019; KPHC, 2019). For the case of Migori County, the area of study, the maternal mortality stood at 412 per 10,000 live births which is high compared to the Kenya's national maternal mortality rate of 342 per 100000 live births. This makes the county as one of the 15 counties in Kenya with the highest maternal mortality at position 10 out of 47. The top 15 counties account for 98.7 percent of maternal deaths in Kenya, according to African Institute for Development Policy (AFIDEP) report of 2017.

These high maternal mortality rates registered can attributed to low utilization rates, as studies have shown that there was low utilization of clinical guidelines among the skilled health providers in many parts of the world. In Africa for example, the implementation of the Evidence Based Practice (EBP) is very low and for the case of Kenya, only about 8% of the nurses fully utilize EBP when providing nursing and

midwifery care (Hoyiso, Arega & Markos 2018). This is despite there being the ministry of health clinical guideline for prevention and management of PE/E in the health facilities in Kenya since 2012. Resulting to high maternal mortality rates attributed to PE/E which is still at 19 percent. A fact that can be linked to previous studies on the utilization of these guidelines by the skilled health providers which reveal that there has been poor adherence to the guidelines, poor knowledge among the skilled health providers on the management of PE/E besides lack of essential supplies for management of PE/E (Muchiri, 2015, & Bahl, 2016). Therefore, this study sought to bridge this gap by interrogating the factors that influence the utilization of Ministry of Health guidelines on management of preeclampsia and eclampsia at public health facilities in Migori County, Kenya.

1.3 Purpose of the Study

The purpose of the study was to establish the factors that influence the level of utilization of Ministry of Health guideline among nurses in the prevention and management of preeclampsia in public health facilities Migori County, Kenya.

1.4 Objectives of the Study

1.4.1 Broad Objective

To assess how the factors influencing the utilization of the MOH guideline in managing pre-eclampsia and eclampsia among the nurses in public health facilities in Migori County.

1.4.2 Specific Objectives

The specific objectives of the study were;

i. To determine the factors that influence the level of adherence to MOH guideline

in the Management PE/E among the Nurses at in public health facilities Migori County

ii. To identify the nurse related factors that influence the utilization of MOH guideline in management of PE/E among the nurses working in public health facilities in Migori County.

iii. To identify facility related factors that influence the utilization of MOH guideline in management of PE/E among the nurses working in public health facilities Migori County.

1.5 Research Questions

The study was guided by the following research questions;

i. Which are the factors that influence the level of adherence to the MOH guideline in management of PE/E among the nurses working in public health facilities in Migori County?

ii. What is the nurse related factors that influence the utilization of the MOH guideline in the management of PE/E among the nurses working in public health facilities Migori County?

iii. What is the facility related factors that influence the utilization of the MOH guideline in the management of PE/E among the nurses working in public health facilities Migori County?

1.6 Justification of the study

This study was justified because many study findings have established that preeclampsia complicates approximately 2 to 8 percent of global pregnancies. And in the context of Africa, hypertensive disorders during pregnancy, including preeclampsia/eclampsia,

have been found to account for 9.1 percent of maternal fatalities (Hinkosa; Tamene & Gebeyehu, 2020) .In Kenya PE/E isc the second direct cause of maternal death at 22.1% hence the need for this study. (iAHO&WHO 2023). For the case of Migori County, which is the focus of this investigation, study findings have revealed that it is one of the many counties that is grappling with an elevated maternal mortality rate. Notably, in 2019 the Kenya population and housing census (KPHC) report, indicated that the maternal mortality rate was at 342 per 100,000 live births annually. Also, PE/E was the second direct cause of maternal mortality in Migori County at 19 % hence the justification for this study.

Therefore, this study looked at the factors influencing the utilization of MOH PE/E guideline and gives recommendations on how to promote its use among nurses and other health care providers in Migori County so as to lead to improved patient outcome.

Therefore, factors that influence the utilization of the MOH PE/E guideline, include nurse related and health facility related factors. In this study, therefore it was increasingly important to identify these factors and understand how they influence the utilization of PE/E guideline among the nurses working in the public facilities in Migori County, as this will go a long way to assist the Migori County administration through the nurses in the management of PE/E.

Since there is limited information of any previous similar studies that have been carried out in public health facilities in Migori County, findings of this study will be useful in improving maternal and neonatal services in the County. As it will help improve the nurses' knowledge base of patients with PE/E thus leading to better patient outcome.

The study findings will also provide a basis for further research among nurses in Kenya and globally on PE/E thus leading to in the realization of Vision 2030 and sustainable development goals (SDGs). Focusing on SDG 3.1 which has an ambitious target of

reducing the global maternal mortality rate from preventable causes related to pregnancy and childbirth to less than 70 per 100 000 live births by 2030 (United Nations ,2023) The findings of this study can be replicated in other public health facilities within other Counties.

1.7 Scope of the Study

The study on the factors that influence the utilization of Ministry of Health guideline in the prevention and management of PE/E among the Nurses in public health facilities in Kenya was limited to Migori County. Those other cadres within this public health structure were excluded from the study.

1.8 Limitation of the Study

1.8.1 Scope of facilities

The study was carried out in public health facilities which in six Sub County Hospitals and one County referral hospital and therefore generalization of the findings to other public health facilities within the County or other counties may not apply.

1.8.2 Recall Bias

Also, the study relied on the recall from memory which may have provided varied responses. The participants might not have accurately past behaviors or challenges with guideline utilization leading to recall bias.

1.8.3 Time constraint

Due to time constraint and demand of their work the respondents may been too occupied with their responsibility to provide detailed responses resulting in incomplete data.

1.8.4 Resource availability

The difference in resource available between facilities such as medication and equipment for the management of PE/E could impact guideline adherence and limit the study's ability to generalize the finding across facilities.

1.8.5 Mitigation of the limitation

To address the above identified limitations this study, implement several strategies to ensure that these factors did not significantly impact the finding

1.8.5.1 Scope of facilities

Given this study focused on a few specific health facilities (Sub County hospitals and a County Referral hospital), data collection was strategically carried out across varied location within the county to capture a broad spectrum of experience form nurses in MCH and maternity wards.

The findings and interpretations clearly specify that the results were most relevant to the selected settings with caution advice considering broader generalization.

1.8.5.2 Reducing recall bias

To enhance data accuracy and minimize recall bias structured interviews were used helping participants to provide more precise response. Also, the reported information was cross-checked with available records, pilot testing was done to identify and refine interview questions inorder to improve clarity and minimize recall bias.

1.8.5.3 Time constraint

Considering the busy schedule of the study participants the researcher allowed flexible interview timing and conducted the outside the peak working hours.

1.8.6 Mitigating limitations

To address the identified limitations, this study implemented several strategies to ensure these factors did not significantly impact the findings:

Given the study's focused on a few specific health facilities (Sub County Hospitals and a County referral hospital), data collection was strategically carried out across varied locations within the county to capture a broad spectrum of experiences from nurses in MCH and Maternity wards. The findings and interpretations clearly specify that results

are most relevant to these selected settings, with caution advised when considering broader generalization.

To enhance data accuracy and minimize recall bias, structured interviews with targeted questions were used, helping participants to provide more precise responses. Where feasible, reported information was cross-checked with available records, further verifying the reliability of the collected data. Pilot Testing was done **to** identify and refine the interview questions to improve clarity and minimize recall bias

Considering the busy schedules of healthcare workers, the researcher allowed flexible interview timings or conduct interviews outside peak working hours. If responses seemed incomplete, follow-up interviews were conducted to help clarify or add details where necessary. Also, data was collected through focus group discussion, review of the patients records to supplement self-reported data. Also analyzing data by facility type helped identify how resources impact guideline utilization and improved the understanding of contextual factors.

1.9 Delimitation of the Study

1.9.1 Population Focus

The study focused only on one cadre of health care providers working in public facilities public health facilities in Migori County .Those nurses working in MCH and maternity units.

1.9.2 Geographic Scope

The study focused specifically on level 4 and level 5 public health facilities within Migori County Kenya. The geographic limitation excludes private health facilities within the County and other public health facilities if lower levels.

1.9.3 Guideline scope

The study only examined the ministry of Health guideline on management of PE/E excluding other related conditions or guideline which would provide broader insight into maternal health management.

1.9.4 Methodological choices

The study relied on data collection methods of self-administered questioner, predesigned checklist based on MOH PE/E guideline, facility assessment checklist and focus group discussion. These methods were chosen to align with the research questions but might have limited the depth or type of data collected.

The study focused on nurse and health facility related factors influencing the PE/E guideline utilization rather than broader health care system level issue

1.9.5 Mitigating delimitations

These strategies minimized the potential effects of study delimitations, thereby enhancing the reliability and contextual relevance of the findings.

While the study centered specifically on nurses in MCH and Maternity wards, this focus was intentional to allow for a more detailed examination within these departments. Findings were noted as specific to this group, with suggestions for future research that includes other healthcare workers to provide a more comprehensive perspective on health facility operations.

1.10 Assumption of the Study

The study assumed that all the respondents (the Nurses) will cooperate and will provide honest answers to the provided questions. The study also assumed that the public health facilities will allow the researcher to do facility assessments and audit the patients records

and that the health

management committee of Migori County will grant the researcher access to collect data.

1.11 Operational Definition of Key Terms

Adherence The act of sticking to something

Clinical guideline Are recommendations on how to diagnose and treat a medical condition

Evidence The available body facts or information indicating whether a proposition or belief is valid

Maternal and Child Health Care Those services that are promotive, preventive,

therapeutic or rehabilitative for the care of the mother and child

Maternal death the death of a woman that occurs either during pregnancy or within a 42-day period following the cessation of pregnancy, regardless of the pregnancy's duration, and is attributed to any cause connected to or managed during the pregnancy, excluding accidental or unrelated reasons.

Maternal Health Care Healthcare and wellness of women encompassing pregnancy, labor, and postpartum periods.

Maternal Mortality Rate (MMR) Is the annual number of female deaths per 100,000 live births due to pregnancy related causes.

Utilization the action of making Practical and effective use of something

Preeclampsia A condition that is characterized by blood pressure of 140/90hgmm or more after 20 weeks of pregnancy in a normotensive woman, it may sometimes occur with proteinuria and fluid retention.

Eclampsia Seizures or coma that occurs in pregnant women with severe preeclampsia

CHAPTER TWO

LITERATURE REVIEW

2. 1 Introduction

This chapter presents a review of the existing literature relevant to the study on the factors that influence the utilization of the guidelines of Ministry of Health guideline in the prevention and management of PE/E among the Nurses working in public health facilities Migori County. Literature was reviewed guided by the objectives of this study, namely to: determine the factors that influence the level of utilization of MOH guideline in the Management PE/E among the Nurses working in public health facilities; identify the nurse related factors that influence the utilization of MOH guideline in management of PE/E among the nurses working in public health facilities; and identify facility related factors that influence the utilization of MOH guideline in management of PE/E among the nurses working in public health facilities. Review of literature in this chapter features research gaps that rationale the need for the study. The chapter ends with a presentation of Theoretical Framework and conceptual framework.

2.2 Empirical literature

2.2.1 Overview of Preeclampsia and Eclampsia

2.2.2 Clinical Guidelines on Preeclampsia and Eclampsia

The purpose of clinical guideline is to improve the effectiveness and quality of care, therefore clinical guidelines provides a benchmark against which the individuals can audit their performance in order to improve their practice or skills for undertaking a particular task (Kredo *et al.,* 2016). Several clinical guideline on PE/E have been developed globally. These guidelines include the AGREE ,the SOMAZ, and the WHO guidelines (Butalia *et al*., 2018; Lowe *et al.,* 2014, & WHO, 2014).

According to WHO evidence based clinical guideline, there is a linkage between the

health care professionals in relation to their performance indicators and implementation strategies.(Garner**,** Hill & Schunemann, 2015). Studies have shown that poor adherence to clinical guidelines by health care providers is one of the leading causes of preventable harm to patients. For the clinical guidelines to be effective, the resources ought to be readily available and the nurses ought to be trained on facilitating the evidence-based process. (Melnyk *et al.,* 2017). If effectively implemented, the clinical guideline will help in improving the clinical outcomes of diseases or conditions, thus will help reduce the duration of hospitalization, or referral for specialized treatment, besides reducing the frequency of hospital visits for patients, (Blume *et al.,* 2016).

Since the adoption of the WHO recommendations, in 2012, Kenya's Ministry of Health has done a few audits to assess the factors influencing the utilization of these clinical guidelines by the skilled health providers and whose results have revealed the low utilization which attributed to lack of refresher trainings among the nurses and written guidelines, lack of essential commodities within the health facilities, (Muchiri, 2015; Omboga, 2012; & Bahl, 2016).

The study gap here is that the study findings do not indicate if all the resources needed for effective clinical guidelines were readily available and if indeed there were, then it would be important to establish if the environment was conducive for them to be implemented so as to enhance the effectiveness.

2.2.3 Utilization of Clinical Guidelines among Nurses

Utilization is characterized as the act of employing something for practical and efficacious purposes. Consequently, the practical application of evidence-based clinical guidelines, particularly for PE/E, is expected to yield multifaceted benefits, extending to patients, nurses, and the overarching healthcare system. The American Nurses Association underscores the imperative of nursing interventions to be grounded in

systematic, practical decisions derived from empirical data, thus being evidence-based, (American, 2015). Nurses, constitute the most substantial cohort of healthcare providers, they embody a pivotal role in affirming that nursing care adheres to evidence-based practices (EBP) (Ellbounty *et al.,* 2018). Employing the EBP methodology within nursing practice not only fortifies the quality of the services rendered but also ensures that they are anchored upon the patient's needs and perspectives, (Indra, 2019). Therefore, the incorporation of EBP into healthcare provision signifies a blend of clinical expertise with the most contemporaneous research available, which not only enhances positive patient outcomes but also facilitates a healthcare system that is both scientifically and ethically robust. In addition, it paves the way for interventions that are systematically validated and holds practitioners accountable, ensuring that patient care is perpetually evolving and adhering to the pinnacle of available knowledge and practice. The gap in this aspect is to address deficits on methodologies that may have been used in past studies, may have been carried out in different environments which may not mirror the characteristics of the current study area.

2.2.4 Influencers of Utilization of the Clinical Guidelines

Clinical guidelines are bridge between policy, best practice, local contexts and patient care (Kredo *et al,* 2016*).* The variable for the influencers of utilization of clinical guideline involves adherence to the PE/E guidelines by the nurses. Adherence to clinical guideline is very crucial in the prevention of poor maternal health outcomes it also helps the nurses to correctly manage patient with PE/E based on evidence-based practice thus ensuring quality of care (Ryan, 2017).

A study carried out at Mbarara Regional and Referral Hospital on adherence of clinical guidelines for PE/E by health care providers revealed that out of 72 records retrieved there was 50 percent adherence to the ten items items on the guideline. The best items

adhered to were anti-hypertensive drugs and magnesium sulphate administration (Atuheire ,Wanyenze & Groves ,2022). Another similar study that was carried out in Pumwani Maternity Hospital revealed that the adherence to the MOH guideline was only at 31.2 percent (Muchiri ,2015). In yet another study done at Garrisa County Referral Hospital among the health care providers on the use of MOH guidelines in the management of severe PE/E, revealed poor adherence to the guidelines that resulted in high maternal morbidity and mortality (Omboga,2014).

A similar study that employed a descriptive approach was conducted so as to gauge the depth of knowledge and adherence to practices amongst nursing personnel in the obstetrical and gynecological departments at Benha University Hospital. And from the findings it emerged that a substantial (65%) of the nurses showcased a satisfactory adherence level to comprehensive practices concerning preeclampsia, (Soliman, Hasneena, Abd Elmoniem & Ali, 2021).

In yet another study by (Browne, Nievelt, Srofenyoh, Grobee & Klipstein-Grobusch, 2015), an audit grounded on specific criteria to evaluate the quality of care provided to women experiencing severe PE/E within a referral hospital situated in Accra, Ghana. The findings pinpointed at varied adherence levels among healthcare providers to the nine PE/E protocols, with a mean adherence rate fluctuating between 15-85% To elaborate further, the aforementioned studies underline a spectrum of adherence to protocols and practices related to preeclampsia across different healthcare settings. These observations bring to light the vital need for consistent application of evidence-based practices and adherence to established guidelines to safeguard maternal health. Variability in adherence underscores potential areas for enhancement in training, awareness, and implementation of standardized care practices within the domain of maternal healthcare, especially concerning critical conditions like preeclampsia.

This study gap from these scholars findings that this research would endeavour to address would be two fold, this study would be justified because the studies were carried out in different environments may not have mirrored the same characteristics such that of the current study area. On the same vein, the findings of this study will address deficits on the research methodologies that may have been used in past studies so as to yield different outcomes.

2.2.5 Socio - Demographic Characteristic

2.2.5.1 Sex

In many parts of the world, the health care services are dominated by women especially in nursing and midwifery areas albeit the fact that most of these women are in working in lower cadres and are clustered in low paying positions. While the management posts are mostly dominated by men, this is despite women having multiple gender-based roles such as caring responsibilities at the household level. And as such women staff tend to face more challenges in accessing both pre and post training on health care especially if they have to pay for these trainings from their pockets. Lack of training and professional updates often make women staff to lag behind in acquiring knowledge on management of medical conditions such as PE/E. Therefore, when gender inequalities and discrimination manifests in the health care system it is usually not treated as such but it is often associated to absenteeism, lower productivity, poor health and hence low morale of the health workers leading poor service delivery and non-adherence to clinical guidelines for management of PE/E (Witter *et al.,* 2017).

2.2.5.2 Age

According to some studies, the age of the nurse may have an influence on the use of clinical guidelines, as nurses who are older are more likely to adhere to clinical guidelines

as compared to the younger nurses. This could be attributed to the fact that as age increases the years of service, it does also influence the persons skills. (Desta *et al*,. 2018)

2.2.6 Nurse Related factors in Utilization of the Guidelines

Nurse related factors in the utilization of the guideline is pegged on the knowledge of the nurse in relation to the guideline for PE/E, years of nursing experience, level of training, professional training and updates as well as the perception of the nurses towards the PE/E guideline. The utilization of the clinical guidelines is a complex process which requires the nurses to be more knowledgeable about the guideline in order for them to be able to implement and adhere to it. Conversely, lack of awareness and unfamiliarity to the guidelines can result to non-adherence to the guidelines and low-quality service provision (Jun, Konver& Stimpfel, 2016 ;Keiffer , 2015).

2.2.6.1 Knowledge of the Nurse on PE/E

A research was done to investigate the knowledge on preeclampsia among 65 nurses at Polizu Clinical Hospital of Obstetric and Gynecology which is a tertiary care centre in Bucharest Romania, the study findings revealed that there were wide gaps in the knowledge of nurses when it came to assessment, diagnosis and management of PE/E .(SOGGIU-DUTA *et al.* ,2019) . Yet another similar study by (Angelina *et al.*, 2020) targeting primary health facilities in Dodoma Region, Tanzania to assess the knowledge of nurses in prevention and management of PE/E showed that the overall knowledge among nurses was at 51.2 %

A distinct study embarked upon an exploration within government-operated public hospitals in Addis Ababa, Ethiopia, aiming to gauge the competency and application of knowledge by 78 nurses working in emergency rooms specializing in gynecology, especially concerning pregnancy-induced hypertension. The evidence illustrated that 54(67.9%) of the participating nurses were endowed with sufficient knowledge

concerning pregnancy-induced hypertension. On the assessment of the nurses' practices on 78 charts that were reviewed 39 (50%) showed good practice toward pregnancy induced hypertension. therefore, the study concluded that the knowledge and practice among the nurses was low (Tadele, Debebe, Tadele & Tilahun, 2020).

To delve deeper, this study shades light on the imperative subject of clinical competency among healthcare providers in addressing pregnancy-related hypertensive disorders. With a fairly substantial percentage of nurses demonstrating adequate knowledge on the same, this presents an encouraging scenario yet also hints at a gap where approximately one-third of them may not benefit from further training and educational interventions. This is crucial, considering that adept management and understanding of pregnancy-induced hypertension which is paramount in mitigating potential complications and safeguarding maternal and fetal health. Such findings pave way for the crafting of targeted educational and professional development initiatives that are aimed at bolstering clinical knowledge and practice within this critical area of maternal healthcare.

Soliman *et. al.,* (2021) carried out a study among nurses at Benha Universtiy Hosptial to asses knowledge and practices regarding the use of evidence based practice for pregnant women with preeclampsia in obstetrical and gynecological department which showed that 41.7% of the nurses had average knowledge about EBP and preeclampsia.

2.2.6.2 Perception of the Nurse

The nurse 's attitude affects the utilization of and adherence to the clinical guidelines. A study carried out in Catalonia in Spain on nurses and physicians to assess the barriers and identify factors that influence health care providers in the implementation of the clinical guidelines. The findings showed that the physicians believed that the clinical guidelines were not so useful to them as they were bureaucratic and control instruments that threatened their professional autonomy. On the contrary, according to the nurses,

the clinical guidelines were essential tools which assisted them in their day to day practice. And as such, the enhancement of the nurses attitude can be through individualized audit and feedback (Gene-Badia *et al.*,2016).

An investigative study conducted in Turkey with the objective of gauging the perceptions and attitudes of both nurses and midwives in relation to the enactment of clinical practice guidelines. The findings revealed that there was a predominantly positive stance among the nursing and midwifery professionals, recognizing the clinical guidelines as both beneficial and conducive in enhancing clinical practice (Ozan, Duman & Isik, 2019).

In furtherance to this, the affirmative attitude toward clinical guidelines among healthcare practitioners underscores the perceived value and subsequent impact these guidelines have had in shaping and informing the clinical practice. Nurses and midwives, often being the front line healthcare providers, play an instrumental role in the direct implementation of these guidelines, which can significantly influence patient outcomes. Thus, recognizing the practicality and efficacy of such guidelines may translate to improved adherence and application in real-world scenarios. It also accentuates the necessity of ensuring that such guidelines are not only robustly formulated but also practically applicable, ensuring they serve as valuable tools for healthcare professionals in delivering optimum patient care.

A study by Rosa & Morda (2021), in Dominican Republic to assess the acceptability and adoption of clinical practice and treatment protocols on preeclampsia among health providers, revealed that the most of the medical and nursing staff were aware of the existence of the clinical guideline for PE/E and were positive about its implementation.

2.1.6.3 Years of Nursing Experience

Research shows that experience in managing a condition is associated with higher

adherence and implementation of the clinical guideline, because the nurse becomes more motivated to learn when she or he is exposed to a clinical condition or problem in a patient for a long period (Neher , Stahi , Festin & Nilsen, 2016). A study on knowledge and management of PE/E among health care providers in a hospital in Lagos Nigeria revealed that the health care providers with more years of practice had high level of knowledge of PE/E (Olaoye, Oyerinde ,Elebuyi & Ologun, 2019).

2.2.6.4 Level of Training

The implementation and adherence to the clinical guidelines is a complex process which requires the nurses to be more knowledgeable about the guidelines. Lack of awareness and unfamiliarity with the guidelines can result to non-adherence to the guidelines and hence low quality service provision. (Jun *et al*., 2016). The level of training may also have effect on knowledge and skills of the nurse in the implementation of clinical guidelines. Studies have shown that the nurses who have a higher level of education or specialized training in EMOC or Midwifery are more knowledgeable and have higher adherence levels to clinical guidelines compared to those with lower level or with no training (Desta *et al*.,2018; Zemedu *et al.*,2019; De Vera & Uyheng ,2018).

In a study conducted by Angelina *et al.* (2020), that sought to explore the depth of knowledge concerning the prevention and management of PE/E amongst nursing professionals in primary health facilities within the Dodoma Region of Tanzania, intriguing findings were uncovered. The results delineated a distinct disparity in knowledge levels between registered nurses and enrolled nurses, with the former demonstrating a more profound understanding of PE/E.

Diving deeper into the topic, this discernible gap in knowledge between registered and enrolled nurses highlights potential implications for educational and training frameworks within healthcare settings. Registered nurses exhibited a more enriched understanding of

PE/E, which might be attributed to their extended and specialized educational and training experiences. Conversely, this underscores a potential area of focus for enhancing continuing education and professional development initiatives, especially for enrolled nurses, to bolster their competency in managing and preventing PE/E effectively. By ensuring that all nursing professionals, irrespective of their registration status, have an in-depth and updated knowledge of PE/E, healthcare systems can fortify their capacity to deliver informed and safe patient care in relation to pregnancy-induced hypertensive disorders.

2.2.7 The Health Facility Related Factors that Influence the Utilization the Clinical Guidelines

The factors that influence the utilization of the clinical guidelines include, clinical guide related factors, resource availability and organization related factors

2.2.7.1 Type of facility

The type of health facility determines the utilization of the clinical guidelines for PE/E. In Kenya the health care services are devolved and their ranking is based on levels 'The higher the level the more advanced and more complex services that are offered. In this system the health facilities are catogorised from level 2 to level 6**.** (Marita, 2019). The facilities in which this research was carried out were of level 4 category which are Sub County Hospital and one County Referral Hospital, which is categorised as level 5. With devolution each county government manages its own health care services, this has led to disparity in service provision between different counties, a fact that can be attributed to several factors like frequent delays in releasing of funds from the central government to the county governments. This causes delay in the purchase of essential medicines and supplies thus leading to stock out of essential drugs in the health facilities. It also leads to delays in disbursement of staff salaries and disruption in payment of goods and

services rendered to the county thus leading to demotivation of staff and hence frequent labor unrest. The above factors can hinder the utilization of clinical guidelines for PE/E by the nurses, (Tsofa ,Molyneuk, Gilson & Goodman, 2017).

A facility based cross-sectional study that was conducted in 28 referral hospital and 30 primary health facilities in Kinshasa Democratic Republic of Congo to assess the health facility readiness and provider knowledge in the management of preeclampsia, the study findings revealed that the midwives in referral hospitals had more knowledge than those in primary health facilities and private hospitals (Nkamba *et al* ., 2020)

2.2.7.2 Clinical Guideline Related Issues

The availability of relevant policies/clinical guidelines in the health facilities does influence the use and adherence to clinical guidelines. In most countries, government policies and guidelines on PE/E fall under maternal health care. And for these guidelines to be effectively utilized by the nurses in the prevention and management of PE/E they ought to be available and accessible at all levels of service provision (Ishaku *et al* .,2019). Most of the nurses in developing countries often work within health systems that lack proper, clear protocols and standard guidelines. Research by Population Council on PE/E management has shown that some of these developing countries like Bangladesh, PE/E policies are not effectively communicated from the central government to local levels and majority of the policymakers and program managers are confused about their existence. In most of the health facilities in many countries lack even operating procedures and checklist thus leaving the health care providers without any formalized resources for managing patients, (Hossain, 2016).

A survey carried out at Coast General Hospital in Kenya, on management of PE/E, recommended that the health facilities should have guidelines in place, displayed clearly within the facilities and there should be a reinforcement on the use of these guidelines

among the skilled health care providers (Bahl, 2016).

Therefore for easy utilization of clinical guidelines by the nurses, the guidelines ought to be user friendly by being short, precise and not complex. The use of tablets, smartphones, checklists and computers can assist in improving the dissemination of the clinical guidelines (Fischer, Lange, Klose,Greiner & Kraemer, 2016).

2.2.7.3 Support Supervision

Support supervision for the nurses is crucial in the level of utilization of the clinical guidelines. Supervision will assist the nurses and their supervisors to identify gap in the management of PE/E.

A study was carried out among nurses in primary health care settings in Dodoma region of Tanzania on knowledge and management of PE/E which showed that there was deficiency in the knowledge on prevention and management of PE/E among the nurses and the study suggested that there was need for regular support supervision and trainings (Joho, Kibusi, Mwampagatwa & Ernest ,2020).

Lack of mentorship and support supervision of staff do affect the uptake of the clinical guideline for PE/E. The allocation of tasks and giving of clear precise instruction on what to do to the staffs helps in the improvement in the adherence to guideline implementation. Also lack of feedback and clinical audit is considered as another hindrance to PE/E guideline implementation (Browne *et al* ., 2015).

Therefore, this creates the need to assess as to whether the current Kenyan Ministry of Health guideline was available at the Sub County Hospitals in Migori County and if it was being used by the Nurses or not. Previously there have been researches done looking at the utilization of guidelines on management of PE/E in other public health facilities in Kenya but none has been done at Sub County Hospital within Migori County**.**

2.2.7.4 Resource Availability

Resources can also influence the utilization of the guidelines. Factors such as shortage of staff due to inadequate number of trained staff on the guidelines ,transfers of staff leading to under staffing , thus hindering one from having enough time to utilize the guidelines in practice. Also staff shortage can lead to heavy workload making the adherence to the PE/E guidelines a challenge to nurses.

Facilities that lack the necessary equipment for detecting PE/E such as dipsticks, urine collection containers for testing proteinuria , blood pressure machines for checking the blood pressure, adequate supply of drugs like the lifesaving drugs such as magnesium sulphate , may lead to de-motivation of nurses thus resulting in non-adherence to the guidelines or misdiagnosis of PE/E especially in areas where uptake of Antenatal care is high (Danmusa, Coeytaux, Potts & Wells 2016; Alnaim & Almaz, 2017).

A multi-country survey by Long *et al* (2017) in 147 health facilities in 15 counties across Africa, Latin America and Asia on clinical practice on use of magnesium sulphate for treatment of PE/E revealed that shortage of staff and lack of essential commodities affected the staff adherence to the guidelines (Long *et al* .,2017).

The findings from the 2015 Kenya health facility survey which was carried out in 641 facilities to asses reproductive and maternal health care services, showed that there were gaps in guideline utilization due to supply chain delays, under staffing, lack of both equipment and supervision of health facilities (MOH & UNFPA, 2016).

2.2.7.5 Training and Update

The utilization of the clinical guidelines depends on training's and updates that the nurses receive. Nurses have a critical role in preventing and managing PE/E and therefore their post training and continuous medical education need to evaluated in public health

facilities.

A study was carried out in Ghana, Malawi, Nigeria, Kenya and Sierra Leon to assess the retention of knowledge and skills after Emoc training among Nurses and Midwives showed after training they were able to retain knowledge and skills for one year (Ameh *et al,*. 2018). A study done in Philippine on midwives to assess their knowledge and practice in the management of pregnancy related hypertension showed that more than 70 percent of the midwives were knowledgeable but those who were trained in BEmONC were able to put the knowledge into practice as compared to those who are not trained (De vera & Uyheng, 2018).

At times the nurses may rely on the previous knowledge and tradition through the use text books rather than using the guidelines and protocols thus limiting their knowledge (Tessema *et al.*, ,2020). The training of the nurses could be attained through continuous education, nursing workshops and interactive conferences, this helps in increasing the nurses knowledge and skills and also raise awareness and increase familiarity on the clinical guidelines (Fischer *et al,*. 2016).

Therefore, this created the need to evaluate whether the current Kenyan Ministry of Health guideline on PE/E was available at these public facilities in Migori County and if it was being used by the Nurses or not. Previously, a research study was done looking at the utilization of guidelines on management of preeclampsia and eclampsia in other public health facilities in Kenya but none has been done at Sub County Hospital within Migori County.

2.2 Theoretical Framework

2.2.1 Theory of Planned Behaviour (TPB).

For evidence based practice to be implemented among the nurses , behaviour change is necessary. For this study the theoretical framework is pegged on Theory of Planned

Behaviour (TPB). TPB was developed from the Theory of Reasoned Action advanced by Fishbein & Ajzen, (Ajzen 2020). The TPB theory is used to predict and explain a range of behavior in different fields in health care such as disease prevention, pharmacology, and family planning (Ajzen, 2020).

According to the TPB theory, a person's behaviour is influenced by three factors the first one being the attitude. Attitude involves the personal opinion one has towards a certain behaviour, i.e. when a person's opinion is positive towards a certain behaviour, he/she is more likely to ape that behaviour. This is relevant in this study in that if the nurse has positive personal opinion towards the utilization of the MOH PE/E guideline then the nurse likely to utilize it**.**

The second factor consists of subjective norm which is a social pressure to perform or not to perform a behaviour. This is what the other people in the cadre or social code think about the behaviour. If they support that behaviour then one is also likely to follow suit. This factor is relevant to this study based on fact that the nurse belongs to a social group and if the nurses as a group accept the use of the MOH PE/E guideline then there is a likelihood of an individual nurse to follow suit through social peer pressure.

The third factor is known as perceived behavioral control, these are factors that might facilitate or interfere with performing a behaviour. This is relevant to this study in the sense that there are many factors that may influence the utilization of the MOH PE/E guidelines such factors include variables like nurse related factors and health facility related factors.

The TPB factors of attitude, subjective norms and perceived behaviour leads to intention. Intentions are motivational factors that influence behaviours and it's a person's readiness to perform a given behaviour, for this case, the nurse willingness to utilize the MOH PE/E guideline.

The figure showing theory of a planned behaviour.

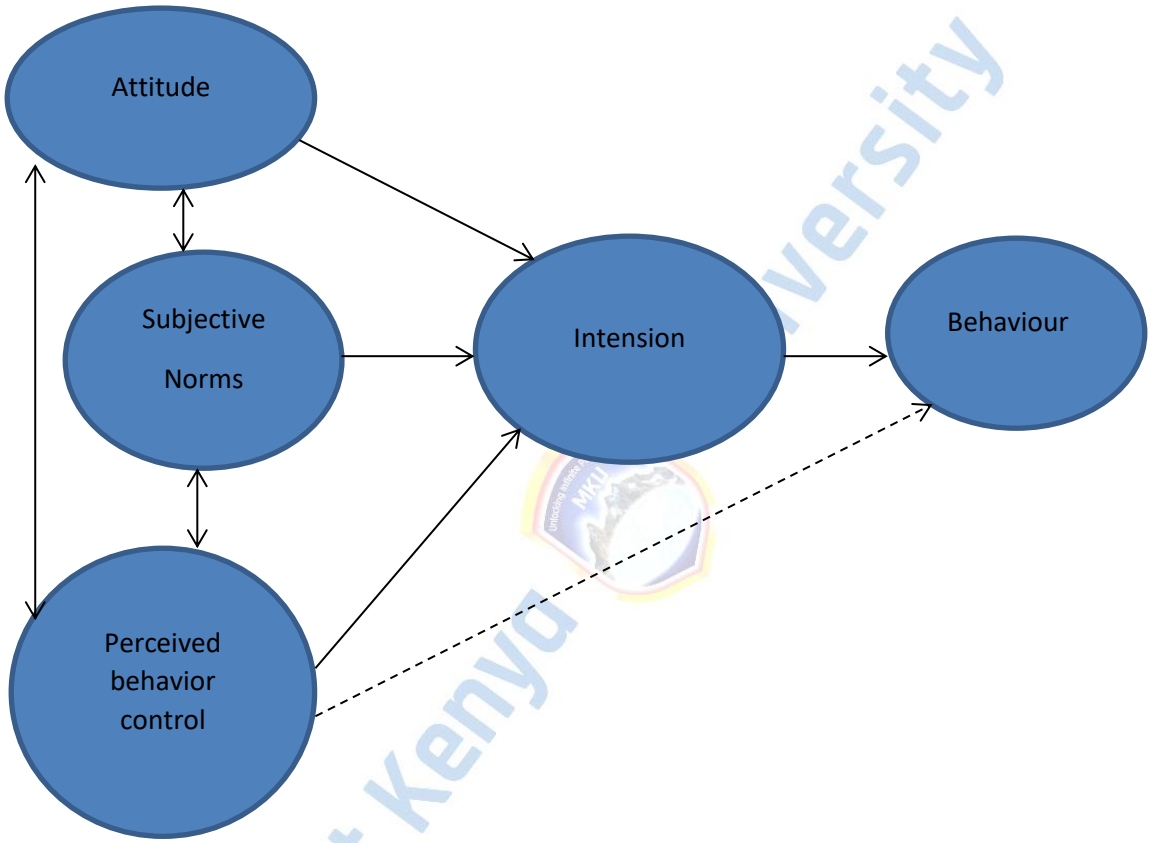


Figure 1: Theory of Planned Behavior (TPB).

Source: Ajzen (1991) Adapted from page 182

2.3 Conceptual Framework

2.3.1. Variables

(i). Independent Variables

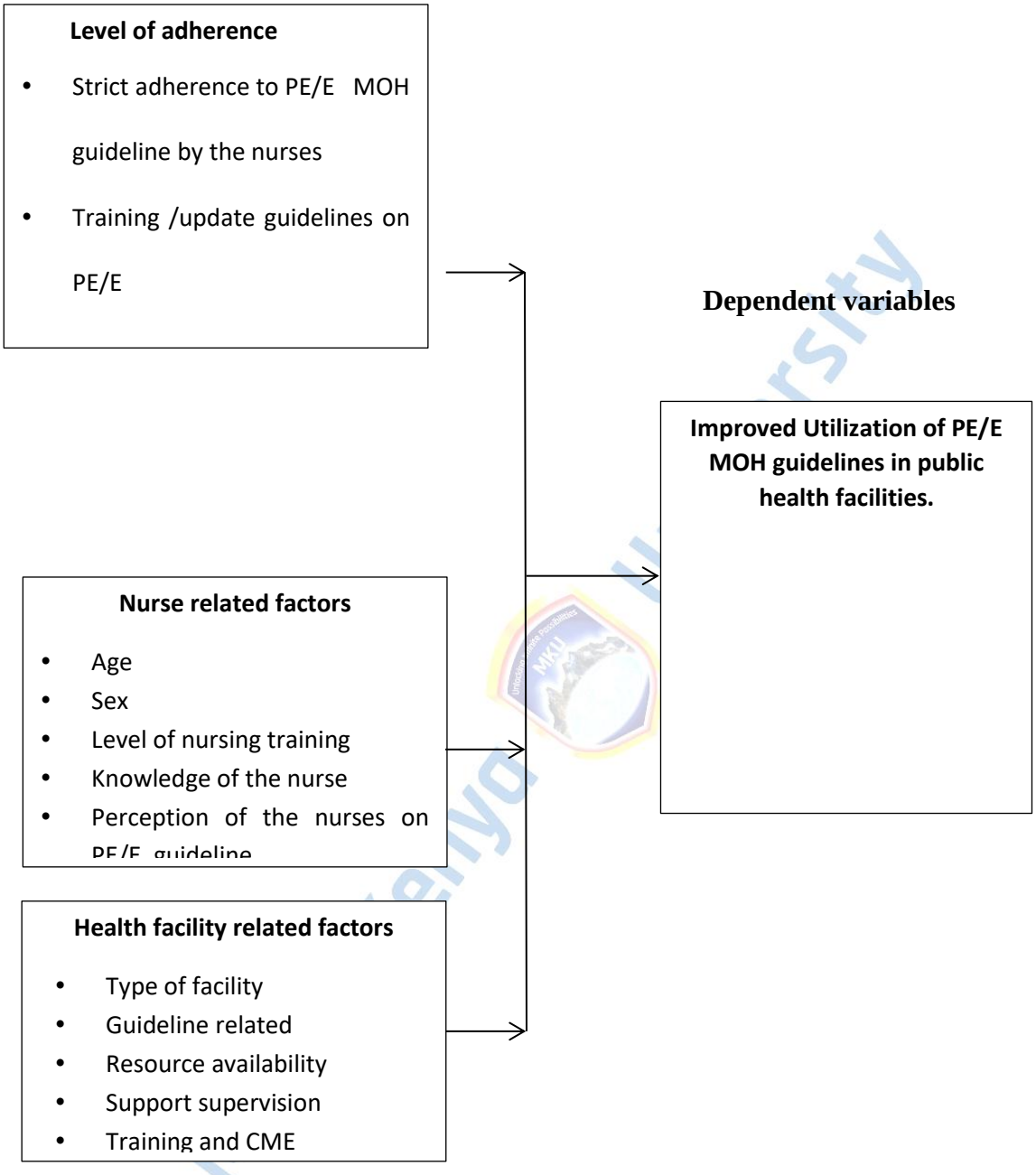
These included level of utilization of the guideline, the nurse related factors and facility health related factors that influence the utilization of MOH guideline.

(ii). Dependent Variable

The dependent variables were the utilization of and non-utilization of Ministry of Health guideline for PE/E the nurses.

The use of clinical guidelines according to WHO recommendations in the management of PE/E can assist in reducing maternal and fetal mortality and morbidity. Although the management of patients with PE/E should be individualized and the patient should be involved in the care (Rao & Tandon, 2017). This study intended to show the relationship between the dependent and independent variables. Independent variables are those conditions that affect dependent variables.

The independent variable is the input that needs to be put in place to prevent and manage PE/E in order to reduce maternal mortality in the public health facilities Migori County and this is the Ministry of Health PE/E guideline. The indicators for the independent variables were the level of utilization, the nurse related and facility related factors that influence the utilization of the MOH PE/E guideline. The dependent variable is the outcome and, in this case, it's the usage of the MoH PE/E guideline. The indicators for the dependent variable are the number of nurses using the PE/E guideline and those not using the MoH guidelines.



Independent variables

Figure 2: Conceptual Framework modified from research by Gagliardi *et al* ,.2011

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the research design which include the study area, study population, the variables, sampling procedures, sample size determination, data collection tools and methods, pretesting or piloting procedures, data management methods and ethical considerations for the study.

3.2 Research Design

This research was a descriptive cross- sectional facility-based survey whose aim was to explore the influence and subsequent utilization of the Kenyan Ministry of Health guideline by the Nurses in the management of PE/E seven public health facilities Migori County.

3.3 Area of Study

The study was done across seven public healthcare facilities situated within Migori County. Positioned in the erstwhile South Nyanza Province, Migori County graces the Southwestern part of Kenya, presenting a diverse geographical and demographic tapestry. It finds its neighbors in Homabay County to the north, Kisii County in the north-east, and Narok County stretching along the east and south-east. Moreover, the Republic of Tanzania is nestled to its south and south-west while Lake Victoria elegantly rests to its west. Notably, Migori County also shares its borders with Uganda through Migingo Island, located in Lake Victoria.

As per the data presented by the Kenya National Bureau of Statistics (KNBS) in 2019, the county unfolds across a geographical spread of 2,596.5 square kilometers and is a home to a populace of 1,116,436 individuals. Administratively, it is partitioned into eight sub-counties, with Migori town being recognized as the largest urban center within its

precincts (KNBS, 2019). Refer to the map in the Appendix for a geographical visualization.

In expanding upon this context, Migori County's unique geographical position and substantial population underscore the importance of understanding healthcare delivery and challenges within this locale. The insights derived from studying healthcare practices and knowledge in this area, particularly concerning conditions like PE/E, can yield pivotal insights into regional healthcare needs, resource allocations, and policy-making, thereby contributing to informed healthcare strategies and interventions that are contextually relevant and impactful.

3.4 Target population

The study population is defined as the entire group about which information is desired and the conclusion is made (Murry ,2016). The target population were all nurses working in public health facilities in Migori County, and through purposive sampling, 7 public health facilities were selected from where data was collected from a total of 246 nurses serving in the 7 health facilities..

3.5 Sampling Procedures and Technique

In the exploration of this study, a dual-method approach to sampling was applied, encompassing both simple random sampling and purposive sampling strategies. The method of simple random sampling was utilized to select the sample size of participants. Here, participants for the research were selected through a lottery method that was entirely chance-driven, assuring that each individual within the prospective study population was provided with an equal opportunity to be included as a participant in the research (West, 2016).

On the other hand, purposive sampling was the chosen technique for the selection of public health facilities and patient records. This approach is particularly noted for its

strategic and intentional selection criteria, chosen due to specific characteristics or qualities, ensuring that the sample chosen is relevant and aligned with the research objectives.

Digging deeper, the utilization of simple random sampling serves to bolster the external validity of the study, offering a fair and unbiased participant selection process and thereby enhancing the potential generalizability of the findings. Meanwhile, the deployment of purposive sampling in the choice of public health facilities and patient records allows for a more focused and deliberate data collection strategy, ensuring that the retrieved information is particularly pertinent to the research objectives and questions. Together, these methods harmonize the randomization and strategic selection of samples, aiming to create a robust and comprehensive foundation upon which the research findings can be built and analyzed.

3.5.1 Sample Population

The sampled population included those Nurses working in MCH clinics and maternity wards in the Sub County hospital in Migori County.

3.5.2 Sample Size Determination

The Cochran (1977) formula was used in the calculation of sample size because the population of the Nurses at the Migori County Referral Hospital is less than 10,000 (Singh & Masuku 2014).

Cochran formula: $n = \frac{n_0}{1+\left(\frac{n_0-1}{N}\right)}$ Where by $n_0 = \frac{z^2pq}{e^2}$

Where: n: sample for the study z = Standard normal deviate set at 1.96.

z score corresponding to 95% confidence level

p=population of skilled health providers that are estimated to have the desired skill (80%)

q=1-p=1-0.8=0.2

e= level of significance .This value at 95%confidences level given at 0.05

Therefore:$n = \frac{\mathbf{1}.96x1.96\ x0.8x0.2=245.862}{\mathbf{0.05^2}}$

Using the round figure 245.862=246

The correctional formula for a population of less than 10000 was used:

$$n_f = \frac{\text{n}}{1+\frac{n}{N!}} = \frac{246}{1+\frac{246}{100}} = 71.098265896 = 71$$

3.6 Inclusion and Exclusion Criteria

3.6.1 Inclusion Criteria

These included nurses who had been working at MCH clinics and maternity wards in the seven public health facilities for atleast for one year.

3.6.2 Exclusion Criteria

Those nurses who had worked for less than one year in MCH clinics and maternity wards in public health facility. Also those on leave ,or sick at the time of the study.

3.7 Data Collection Methods

3.7.1 Questionnaire

Data accumulation for the study was conducted through the deployment of self-administered, structured questionnaires, which were completed by the participating nurses. These questionnaires, embedded with 24 multiple-choice questions, were strategically designed to glean insights into the nurses' knowledge concerning the Ministry of Health (MOH) clinical guideline.

The questionnaire was divided into three distinct sections, each serving a unique investigative purpose. Section one delved into exploring the socio - demographic aspects and educational background of the nurses, crafting a demographic overview of the

respondents. The second section was crafted to assess the nurses' knowledge related to the management of Preeclampsia and Eclampsia (PE/E). Moving forward, the third section sought to explore the attitudes of the nurses towards the utilization of the MOH guideline.

For analytical clarity and objectivity, a scoring mechanism was implemented. Every item or question was structured in a way that a correct response was awarded one point, while incorrect responses garnered a score of zero. It was imperative for the respondents to navigate through and answer all questions accurately.

Expanding further, the intention behind the structured approach to the questionnaires was to facilitate a systematic and consistent data collection process. The meticulously crafted questions, while capturing essential knowledge, also provided a unified framework through which the respondents' comprehension and adherence to the MOH clinical guidelines could be critically assessed. This methodological approach ensured not only the qualitative richness of the data but also underpinned the findings with quantitative robustness, thereby facilitating a comprehensive analysis of the insights garnered through the research.

3.7.2 Checklist

A checklist concerning facility inventory was utilized to evaluate the presence of essential supplies and apparatus crucial for the prevention, identification, and management of PE/E, in accordance with guidelines set forth by Kenya's Ministry of Health.

The level of adherence was assessed in two ways, one was through self reporting where the respondents were asked a question on utilization of the guideline and the other method was through a pre designed checklist that was used to collect data on the medical records of women admitted with severe preeclampsia and eclampsia at Migori

County Referral Hospital for one year 2021. All the records were identified and reviewed one by one and those with diagnosis of severe preeclampsia and eclampsia were reviewed using a pre-designed checklist which was based on the MoH standard care for management of PE/E and it contained 11 items. Each statement scored as follows (1)if done (0) if not done with score practices classified. A cut of 8 items out of 11 items was considered to be adhering.

3.7.3 Focus Group Discussion

A focus group discussion was done to collect qualitative data, the questions on the focus group discussion tool covered all the sections that were in the main questionnaire but in a more summarized format.

3.8.Pre test

The accuracy in data collection is largely dependent on the data collection instruments so as to ascertain validity and reliability of the tool, Mugenda, et al (2003). The aim of the pretesting was to assess the validity and reliability of the tools used in the study and ascertain if they were addressing the objectives of the study. The retesting was carried out at Uriri Sub County Hospital which is a level four public health facility. Ten respondents were targeted in pretesting . The feedback from the pretesting was used to refine and align the questions in the data collection instruments before embarking on the main exercise of data collection, Mugenda & Mugenda, (2003). Any questions that were not clear were modified in order to ensure that they were easy to understand and relevant to the objective of the study so as to enhance the validity of the responses that were obtained later.

3.8.1 Instrument Validity

Validity refers to the degree to which a study succeeds in measuring intended values. It also measures the extent to which the emerging differences found reflect as true among

the respondents, Cooper & Schindler, (2008). High premium is placed on three types of validity tests: content, construct and criterion-related validity tests, Cooper &

Validity is considered as the strength of conclusions, inferences or propositions. Four types of validity were tested in this study: concurred validity, content validity, external validity and face validity. Concurred validity looked at the level of likelihood that a question was misunderstood or misinterpreted; content validity counter checked as to whether an instrument for data collection provided adequate coverage of a topic; whereas construct validity examined the theoretical foundations underlying a particular measurement. With regards to external validity, it looked at the extent to which the findings of one study could be replicated to other situations.

Content validity was used in this study so as to help determine the accuracy of the measure of the domains represented by a concept, Cohen, Manion & Morrison, (2011). Content validity was established by the results and comments by the supervisors The public health facility that was selected for the pilot study that is Uriri Sub County Hospital which is a level four public health facility, was excluded from the final sample frame of the study. Consultations and discussions with the supervisors and peers was done to verify the content validity.

3.8.2 Instrument Reliability

Reliability according to Saunders, Lewis, & Thornhill, (2012) can be defined as the ability of data collection techniques and analytic*al* procedures to generate consistent findings through repeated trials to ensure that the data collection techniques and analytic*al* procedures are reliable, the tools for data collection were designed based on the research questions. And for that matter, the questions were standardized, validated and made reliable for testing purposes. The mode of establishing reliability was through

the use of split-half method. In this method, the test was randomly divided into two parts so as to obtain a score for each half and enable the calculation of reliability coefficient. Using Pearson's product moment formulae, the scores from each half was correlated to find the coefficient of reliability as indicated here below:

Pearson's coefficient of correlation

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{\sum x^2 - x^2}\sqrt{\sum y^2 - y^2}}$$

Where n= sample size x, y = variables

Where the value of r lies between $\pm$1, the closer the value will be to +1 the stronger the congruence. Interviews were administered in an environment that ensured freedom, privacy and confidentiality of respondents. From which a positive correlation of 0.7 and above was to be an indicator of the instrument being reliable.

The reliability of the interview schedule and the observation schedule was established through construct validation process. The researcher however sought the opinions of medical experts and University supervisors to verify the suitability of the interview questions and observation items in the collection of data that was required.

3.9 Data Collection Procedures

After obtaining approval from Mt.Kenya University, School of Nursing to conduct the study, the researcher applied for a research permit from the National Council for Science Technology and Innovation (NACOSTI) for the research to be registered and license granted for collecting data in the target public health institutions in Migori County. After the NACOSTI license is granted, the researcher and the research assistant proceeded to Migori County Referral Hospital, armed with the relevant tools and licenses to seek

authority to conduct the study in the respective public facilities in the County. The authority to conduct the research was sought from the Migori County Director of Health Services as well as the Migori Referral Hospital Administrator who after granting permission communicated the same to all the public hospitals within the county. The researcher then booked appointment for the interviews with the respective public health facilities heads who purposively helped in identifying the respondent nurses for the study. After the authority was granted, the researcher and the assistant then proceeded to administer the questionnaires to the target respondents. The completed questionnaires were collected once filled by the respondents. The researcher thereafter sought permission to visit conduct focus group discussions .

3.10. Data Collection Methods

Data was collected from the target respondents who were at the same time the key informants in the FGD which was done so as to gather specific information aimed at providing facts relevant for the study. According to Rohila, (2010) data collection techniques enable the researcher to systematically collect information about the object of study as well as that of the setting in which they occurred. Both primary and secondary data was used in the study. Primary data was collected through personal interviews via questionnaires and through Focus group discussion, so as to get an accurate and current understanding on the factors that influence the utilization of Ministry of Health guidelines on management of preeclampsia and eclampsia at public health facilities in Migori County, Kenya. Personal interviews were used to pre-test the structured questionnaire that was developed and administered in the survey. The questions were generated from the MOH guideline in the management of preeclampsia and eclampsia which is found on page 85 of National Guideline for Quality Obstetrics and Perinatal care . Secondary data was collected from audit of the records of patients admitted with

severe eclampsia and eclampsia in Migori County referral Hospital and also through facility assessment check list of equipment and items for management of preeclampsia and eclampsia in these public health facilities.

3.11 Data Analysis

Data analysis is described as the process of bringing order, structure and meaning to the mass of the information collected. It involves examining and processing of data that has been collected and making deductions and inferences from the outcomes. After the questionnaires were duly filled and collected, cross-examination was done to confirm the accuracy, completeness and identify errors of omission and commission.

The data collected was stored in a computer which had a password in order to protect the data and the computer was managed by the principal investigator.

The following steps were then used in data analysis: data editing or cleaning was done to ensure that the data was free from inconsistencies and incompleteness. After cleaning, the data was the coded, the coding was done following these steps: developed a code book/sheet, coded the data and verified the coded data. Once the data was coded, randomly selected a few tools and recorded the responses to identify if they had any discrepancies in coding. Thereafter a template for data entry was developed where all the quantitative data was keyed in for processing and subsequent analysis using the Statistical Package for Social Sciences (SPSS) version 23. Quantitative data was also analyzed descriptively and inferentially.

For qualitative data, content analysis was used through the following steps; identifying the main themes, assigning codes to the main themes, and classifying responses under the main theme. Qualitative data was analyzed along emerging themes in line with the research objectives by sorting the results into categories for analysis. Descriptive

statistics was used to analyze categorical data. Spearman Rank Order Correlation Order and chi square (χ^2) was used to measure the strength and direction of association that exists between the variables. Then the data was summarized and presented in form of percentages, proportion, charts and tables.

3.12 Ethical Consideration

For ethical consideration the principal investigator got permission from, Mount Kenya University Ethics Committee, (REF MKU/ERC/1875). Also from the National Council for Science and Technology(REF 18856) and from the County Director of Medical Health for Migori County,(MIG/CDH/TR/VOL/11/93) .The participants also signed a consent form before participating in the study. The consent form consisted of the purpose of the study, the benefits, the potential risks and how the collected data will be used. The identity of subjects was kept confidential by omitting the name or any other identifiers

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This section deals with presentation of findings and discussion. This study assessed the utilization of the MOH guideline in the prevention and management of PE/E among the nurses in the seven public health facilities in Migori County. The results are presented per specific objectives using tables and figures. Also, the findings from the current study were compared with other previous studies of the same topic.

A Total of 71 nurses participated in the study. Self-administered Questioners were used and a focus group discussion was conducted among the Nurses in Awendo Sub county hospital .Also a check list was used to assess the facilities capacity in managing PE/E .A review of medical records of patients with severe preeclampsia and eclampsia was done using predesigned check list based on MOH guideline.

4.2 Presentation of the finding and discussion

The purpose of this study was to assess the utilization of the MoH guideline for prevention and management PE/E among nurses in public hospitals Migori County**.** The findings contain both quantitative and qualitative.

4.2.1 The Level adherence of the MOH guideline in the management of PE/E

The first specific objective of this study was to determine the level of utilization of the MoH guideline in the management of PE/E among nurses in public health facilities in Migori County. Seventy one Nurses from seven health facilities participated in this study.

The self reported adherence level toward the PE/E guideline by nurses revealed that

69(97.2%)of them had indicated that the guidelines were followed while managing PE/E and only 2(2.8%) of the respondents who indicated that the guidelines were not followed when providing care to patients.

A medical review of records of patients was done. These were patients admitted at Migori county teaching referral hospital with severe preeclampsia and eclampsia in the year 2021.A predesigned checklist which was used based on MoH guideline for PE/E management..

With the help of records staff out of 70 files of patients admitted with PE/E in 2021, 30 files retrieved those women who were diagnosed with severe preeclampsia and eclampsia. The 30 files were reviewed one by one using a predesigned check list which had 11 parameters of standard of care for severe preeclampsia and eclampsia

Majority of the patients were in the age bracket of 13 to 36 years with the mean age being 25 years. Patients who severe preeclampsia were 23(76.7%) and those with impending eclampsia and eclampsia were 7(23.3 %).

The study showed that the adherence level was at 9(30%) while non adherence was at 21(70%) with the mean value of adherence being 56.7. The most adhered to was administration of antihypertension treatment at 28(93.4 %) Magnesium sulphate at 29(96.7%), monitoring of fetal heart was at 29(96.7%), preparation for delivery was at 25(83.3%=) and urine output monitoring was at 24(80%).

The least adhered to was nursing the patient in a quiet room, monitoring the vital signs every 15 to 30 minutes as per the protocol and monitoring for Magnesium sulphate side effects.

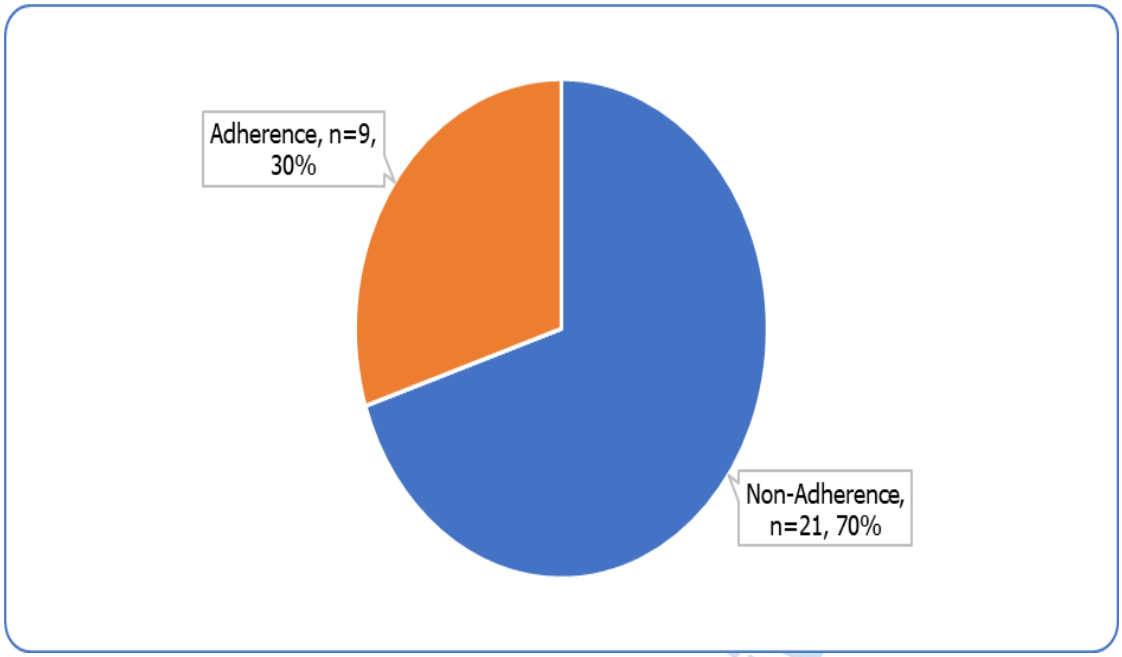


Figure 3: The level of adherence for management of patients with severe PE/E

Source: Field Data (2023)

4.3 Socio-Demographic Characteristics

A total of 7 public health facilities were visited during the study and 71 nurses participated in the study . In the study, 12 (17%) of the respondents were Male nurses and 59 (83%) were female nurses . The mean age of the respondents was 36 SD= 8.4 years and ranged from 25 to 58 years.

In terms of professional qualification 50 (70%) of the respondents were Kenya Registered Community Nurses, 10 (14 %) were Enrolled Nurses, 11(16%) of the respondents had a Bachelor's Degree in Nursing. MCH had the majority of the respondents with 60%, 42% were from the labor ward and 21% worked in the postnatal ward.

The mean number of years worked in the health care sector for the respondents was 9 years while within that health facility was 4 years and had worked within those respective units for at least 2 years as shown on the table below:

Table 1: Socio-Demographic Characteristics of nurses in public Health Facilities Migori County Kenya 2022

Variable	Category	Frequency (N=71)	Percentage (%)
Facility	Nitimaru	8	11.3
	Kegonge	7	9.9
	Kehancha	10	14.1
	Awendo	17	23.9
	Rongo	10	14.1
	Isibania	7	9.9
	Migori	12	16.9
Gender	Male	12	16.9
	Female	59	83.1
Age in Years	Mean±SD; Range	36±8.4	[25-58]
Place of Work-MCH		43	63.3
Place of Work-Labour ward		28	39.4

Place of Work-Postnatal Ward		12	16.9.
Professional Qualification	Kenya Registered community Nurse	50	70.4
	Enrolled Nurse /Midwife	10	14.1
	Bsc. Nursing	11	15.5
Years worked in-Healthcare	Mean±SD; Range	9±6.9	[0.67-34]
Years have you in the Facility	Mean±SD; Range	4±5.7	[0.25-26]
Years worked in the Unit	Mean±SD; Range	2±1.5	[0.08-6]

Source: Field Data (2023) SD(Stardard deviation)

4.4 Nurse related factors in Utilization of the MOH Guideline for PE/E

The second objective was to determine Nurse related factors that influence the utilization of PE/E guideline these included sociodemographic characterists , knowledge of PE/E guideline and the perception of the nurses on the MoH guideline for PE/E.

4.4.1.Knowledge on PE/E

To assess the knowledge of the nurses on the MOH guideline for PE/E, a questioner consisting of 24 multiple choice questions was used. The questionnaire was self-administered and the respondents were asked to give characteristics of Preeclampsia as presented by a pregnant mother. Most 47 (66.2%) of the respondents indicated it was

characterized by a new onset of hypertension after 20 weeks of gestation, 57 (80.3%) said that it is a systolic blood pressure which was equal to or greater than 140mmhg on two readings. The highest number of respondents 62 (87.3%) indicated that it was characterized by a diastolic blood pressure of greater than or equal to 90mmhg while 56 (78.9%) said that it was Proteinuria of more than 300mg (0.3g/) in 24 hours.

On classification of pre – eclampsia, 55(77.5%) classified it as Mild Pre-eclampsia while 52 (73.2%) classified it as Severe Pre-eclampsia and 29 (40.8%) classified it as Eclampsia.

When respondents were asked symptoms of preeclampsia in pregnant women, 66 (93.0%) said that it was a systolic pressure that was above 160mmhg or a diastolic pressure of 110mmhg or higher on two occasions at least 4 hours apart, 47 (66.2%) indicated that it was an onset of cerebral or visual disturbance, 39 (54.9%) indicated that was epigastric pain while 18 (25.4%) said that it was nausea/vomiting.

Lastly, when looking at the characteristics of eclamptic fits, a substantial 73.2% identified convulsions irrespective of hypertension severity as a characteristic (a), while 74.6% acknowledged that convulsions might be followed by a coma lasting minutes or hours depending on the seizure frequency (c). Only 16.9% associated rapid-sequence seizures, possibly ending in death (b), with eclamptic fits. A minimal 1.4% selected "Don’t Know" (d), demonstrating that while there's decent awareness about the serious manifestations of eclampsia, the acute, life-threatening characteristics might need more emphasis in awareness and educational initiatives.

Table 2: Nurses knowledge on the PE/E MOH Guideline IN Public Health Facilites

in Migori County Kenya 2022

Preeclampsia is characterized by when a pregnant woman presents	Frequency (N=71)	Percentage (%)
a) A new onset of hypertension after 20 weeks of gestation	47	66.2
b) A systolic blood pressure which is equal to or greater than 140mmhg on two readings	57	80.3
c) A diastolic blood pressure of greater than or equal to 90mmhg.	62	87.3
d) Proteinuria of more than 300mg (0.3g/) in 24 hours	56	78.9
e) Others[a]	9	12.7
f) Don't Know	1	1.4
Pre-eclampsia is classified as	**Frequency (N=71)**	**Percentage (%)**
a) Mild Pre-eclampsia	55	77.5
b) Pre-eclampsia is classified as Severe Pre-eclampsia	52	73.2
c) Eclampsia	29	40.8
d) Others[b]	3	4.2
e) Don't Know	2	2.8

Severe preeclampsia is when the pregnant woman is having	Frequency (N=71)	Percentage (%)
a) A systolic pressure that is above 160mmhg or diastolic pressure of 110mmhg or higher on two occasions at least 4 hours apart.	66	93.0
b) A new onset cerebral or visual disturbance	47	66.2
c) Epigastric pain	39	54.9
d) Nausea/vomiting	18	25.4
e) Others specify[c]	2	2.8
f) Don't know	1	1.4

The characteristics of Eclampsic fit includes:	Frequency (N=71)	Percentage (%)
a) Convulsions which occur regardless of the severity of hypertension	52	73.2
b) Seizures which occur in rapid sequences as in status epilepticus and may end in death	12	16.9
c) Convulsion may be followed by coma that lasts minutes or hours depending on the frequency of the seizures	53	74.6
d) Don't Know	1	1.4

Source: Field Data (2023)

According to the Ministry of health guidelines the first line drug in the controlling preeclamptic hypertension according to the respondents it was hydralazine(Apresoline) with 50.7% (n=36) c stating that . And 8(11.3%)citing Labetalol, 37(52.1%) citing Nifedipine, and 24(33.8%)citing Aldoment.

Most respondents 52(73.2%) indicated that the first line drug was readily available within the unit with 14(19.7%)saying that patients bought the drugs while 4(5.6%) said that the drug was not available. According to the respondents the first line drug recommended to control convulsion in eclampsia as per MOH PE/E guideline was stated by 69(97.2%)of them as Magnesium sulphate ,while 3(4.2 %) of the respondents indicated that it was Diazepam and 1(1.4%) said that it is Phenytoin.

On signs of Magnesium sulphate toxicity, 56(78.9%) said that it was when respiratory rate fell below 16 per minute while 64(90.1%) said that it was when urinary output fell below 30ml per hour over the preceding 4 hours.

On the antidote for magnesium sulphate toxicity, majority 68(95.8%) of th participants indicated it as Calcium gluconate 1 g (10mls of 10% solution) IV slowly while only 4(5.6%) participants indicated it as Intravenous fluids of Ringers lactate or Normal saline in 4 hours.

On availability of Magnesium sulphate, 62(87.3%) of the respondents said that it was readily available at their unit while 5(7.0%) said that it was not available while 2(2.8%) of the respondents said that the patients buy the drug. See the table below

Table 3: As Per the Ministry of Health Guideline for PE/E the first line Drug in Controlling Preeclamptic Hypertension in public health facilities in Migori County

Kenya 2022

According to the Ministry of health guidelines which is the first line drug in controlling preeclamptic hypertension	(N=71)	(%)
a) Hydralazine (Apresoline)	36	50.7
b) Labetalol	8	11.3
c) Nifedipine	37	52.1
d) Aldoment	24	33.8
Don't know	1	1.4
Is the above first line drug available in your facility	**(N=71)**	**(%)**
a) Readily available in the unit	52	73.2
b) Patients buys	14	19.7
c) Not Available	4	5.6
d) Don't know	2	2.8

Source: Field Data (2023)

Table 4: As per the Ministry of Health Guideline the first line Drug Recommended to Control Convulsion in Eclampsia in Public Health Facilities Migori County, Kenya 2022

According to the Ministry of health guideline the first line drug recommended to control convulsion in eclampsia is	(N=71)	(%)
a) Magnesium sulphate	69	97.2
b) Diazepam	3	4.2
c) Phenytoin	1	1.4

d) Don't know	1	1.4

What are the signs of Magnesium sulphate toxicity	(N=71)	(%)
a) Respiratory rate falls below 16 per minute	56	78.9
b) Urinary output falls below 30ml per hour over the preceding 4 hours	64	90.1
c) Others[d]	12	16.9
d) Don't know	1	1.4

What is the antidote for magnesium sulphate toxicity	(N=71)	(%)
a) Calcium gluconate 1 g (10mls of 10% solution) IV slowly	68	95.8
b) Intravenous fluids of Ringers lactate or Normal saline in 4 hours	4	5.6
c) Do not know	3	4.2

Is Magnesium sulphate readily available in this unit	(N=71)	(%)
a) Readily available in the unit	62	87.3
b) Patients buys	2	2.8
c) Not available	5	7.0
d) Don't know	2	2.8

Source: Field Data (2023)

When asked about the management of severe pre-eclampsia and Eclampsia, the of the majority 66 (93.0%) of the respondents cited that it was monitoring of vital signs every 15 -30minutes, 62 (87%) of the respondents cited that the patient needed to be admitted,

61(85.9%) of the respondents cited that one needed to consider timing and mode of delivery, 60 (84.5%) cited that it was managed by fixing and indwelling catheter to closely monitor urine output while 59 (83.1%) of the respondents cited that it is managed by giving magnesium sulphate as per regime to control/ prevent fits.

On the management of a patient with eclampsia during the postnatal care, majority 60 (84,5%) of the respondents said that there was need to continue anticonvulsive therapy for 24 hours after delivery or last convulsion whenever occurs last, 63 (88.7%) of the respondents indicated that to manage it there is need to continue antihypertensive therapy if the diastolic pressure is 110 mmHg or more. 60 (84.5%) and 41 (57.7%) said that it is managed by continuous monitoring of urine output and carefully watching the development of pulmonary oedema

Table 5: The Nurses Knowledge on PE/E Guidelines in public Health facilities in Mgiori County Kenya 2022

What is the management of severe pre-eclampsia and Eclampsia (with Blood Pressure of diastolic 110 mmhg and above)	(N=71)	(%)
a) Admit patient	62	87.3
b) Nurse in a quiet semi dark room	31	43.7
c) Monitor vital signs every 15 -30minutes	66	93.0
d) Give magnesium sulphate as per regime to control/ prevent fits	59	83.1
e) Consider timing and mode of delivery	61	85.9
f) Fix an indwelling catheter to closely monitor urine output	60	84.5

g) Maintain an input and out chart	54	76.1
h) Do blood chemistry (liver enzymes and creatine)	44	62.0
i) Start antihypertensive as per MOH guideline to control blood pressure	51	71.8
j) Others[e]	1	1.4
k) Don't know	2	2.8
What is the management of a patient with eclampsia during the postnatal care	(N=71)	(%)
a) Continue anticonvulsive therapy for 24 hours after delivery or last convulsion, whenever occurs last.	60	84.5
b) Continue antihypertensive therapy if the diastolic pressure is 110 mmHg or more	63	88.7
c) Continue to monitor urine output.	60	84.5
d) Watch carefully for the development of pulmonary oedema	41	57.7
e) Others[f]	2	2.8

[e] Keep safe from danger due to convulsions and tongue biting

[f] Continue monitoring for magnesium toxicity monitor for any (PHQ) PPH.**)**

Source: Field Data (2023)

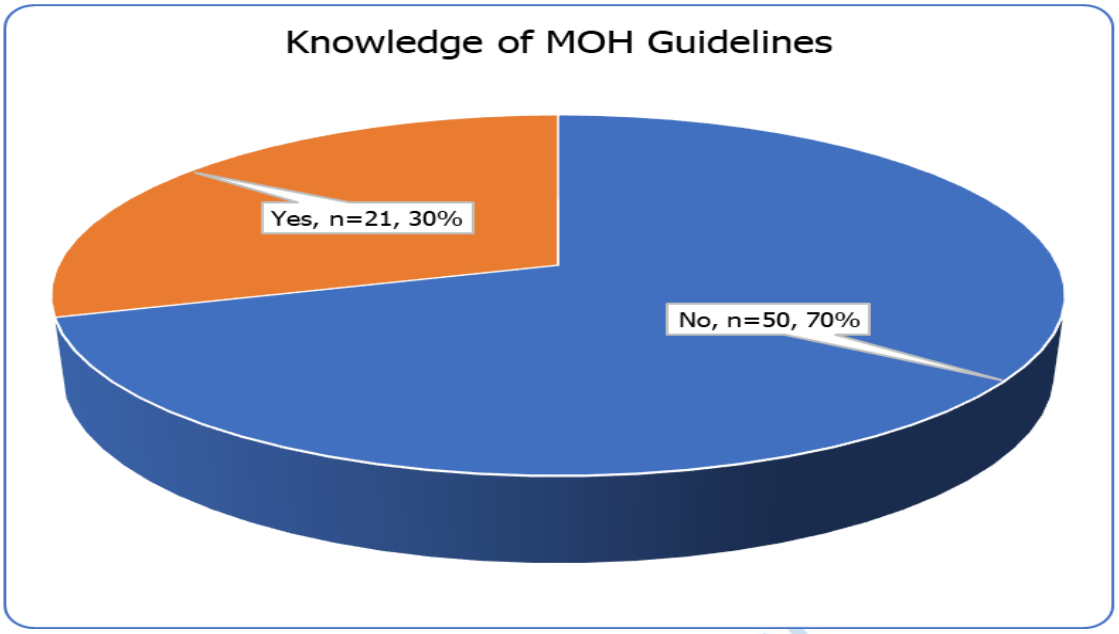


Figure 4: Knowledge of MOH Guidelines for PE/E

Source: Field Data (2023)

4.4.2 The Level of Training

On training and update 46(64.8%)of the respondents received training on Emergency Obstetric Care, while 52(73.2%) were trained on Focus Antenatal Care, and 29(40.8%) on Targeted Postnatal Care.

On postnatal care training 19(34.5%) of the respondents indicated that were trained within the last 6months and11(20%) of them indicated that they were trained in the last one year while 17(30.9 %) were trained in the last 2-3 years .

For training on the MOH PE/E guideline 72.4 % of the respondents stated that they had been trained

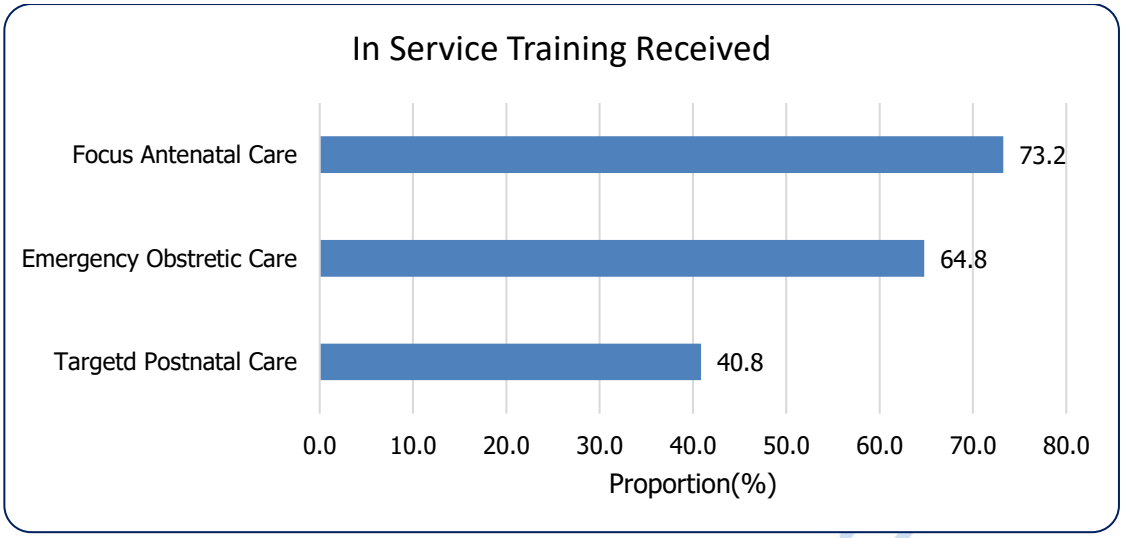


Figure 5: Shows the Level of Training of the nurses in public health facilities in Migori County, Kenya 2022

Source: Field Data (2023)

4.4.3 Perception of Nurses on the Utilization of the MoH Guidline for PE/E

The nurses were asked to rate 7 statements on a 5 Likert scale where 1 represented strongly disagree and 5 represented strongly agree on MoH guidelines. Based on the calculated mean, out of the 7 statements, the nurses strongly agreed with 4 statements and which were; The guideline allows us to practice skills which we would have not practiced before its implementation (4.5±0.8). The guideline has improved my knowledge on the management of patients with preeclampsia and eclampsia (4.5±1.1), The guidelines are written in a simple term, they are clear and easy to follow (4.4±1.1) I would highly recommend the utilization of these guidelines to other skilled health care providers (4.6±1.0). There were 2 statements which Nurses disagreed with namely; the workload has increased thus resulting in poor patient care (2.1±1.0) and the guidelines are very complex, long not easy to follow (2.0±1.0)

There was one statement which the nurses agreed with which is “am satisfied that the guidelines have reduced workload for patients with PE/E” (3.5±1.4)

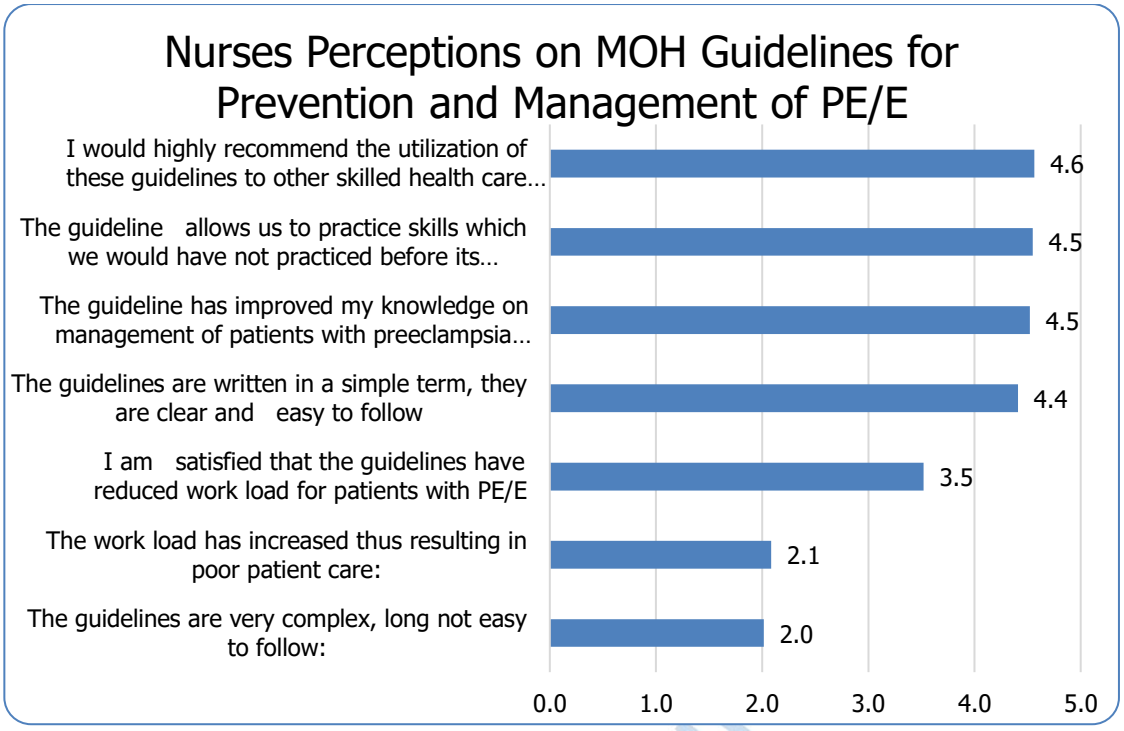


Figure 6: Shows the Nurses perception on the MOH guidelines for PE/E guideline in Migori County Kenya 2022

Source: Field Data (2023)

4.5 Health Facility Related Factors in that Influence the Utilization of the MOH Guideline

The third objective was to determine the health facility related factors that influence the utilization of MOH guideline in the management of preeclampsia and eclampsia among the Nurses in public health facilities in Migori County. These factors that influence utilization of the guideline include guideline related factors, resource availability, and organizational factors.

4.5.1 Guideline related factors

The respondents that were aware of the exitance of the MOH guideline for PE/E management in their facilities were 68(95.8%). In assessing the level of supplies and equipment in the seven facilities, 5 facilities had job aid to show how to give magnesium sulphate. These job aids were displayed in the maternity wards .Two

facilities which included Migori County Referral Hospital and Kegonge Sub County Hospital did not have job aids displayed in the facility. At Kengoge the nurses stated that they had just moved to the new maternity unit that is the reason as to why there were still no job aids.

Kehancha Sub -County Hospital and Migori Teaching and Referral Hospital had the job aid on how to use magnesium sulphate printed in the mothers antenatal book and inpatient files .

Out of the seven facilities only one facility had National Guideline for quality Obstetrics and Perinatal care book , the MOH guideline on prevention and management of PE/E is found on page 85 of this book. The book was printed in 2010.

4.5.2 Resource Availability

Drugs for controlling blood pressure and managing eclampsia

On self-reporting by the respondents , most 52(73.2%)of them indicated that the first line drug in controlling the blood pressure which is hydralazine was readily available within the health facilities with 14(19.7%) saying that patients buys the drugs while 4(5.6%)said that the drug was not available. When facility assessment was done all the health facilities had ant hypertensive drugs 7(100%) with hydralazine being in all health facilities at 7(100%) followed by nifedepine at 6(85.7%)and methyl dopa at 5(71.4%)

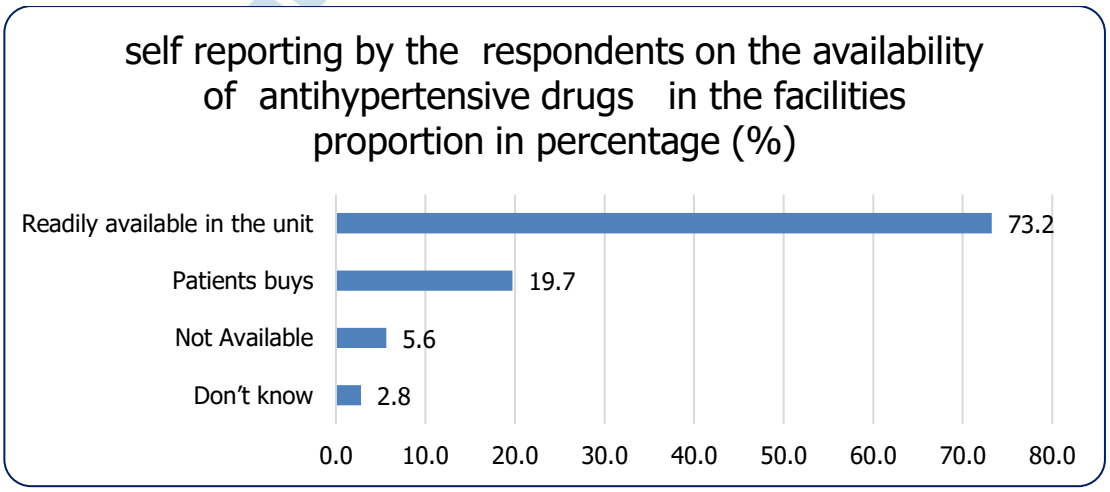


Figure 7: Self Reporting by the respondents on the availability of antihypertensive drugs in public health facilities in Migori County , Kenya 2022

Source: Field Data (2023)

On availability of Magnesium sulphate for controlling convulsion in eclampsia, 62(87.3%)of the respondents said that it was readily available at their unit while 5(70% said that it was not available while 2(2.8%) of the respondents said that the patients buy the drug. But on facility assessment all the 7(100%) facilities had Magnesium sulphate.

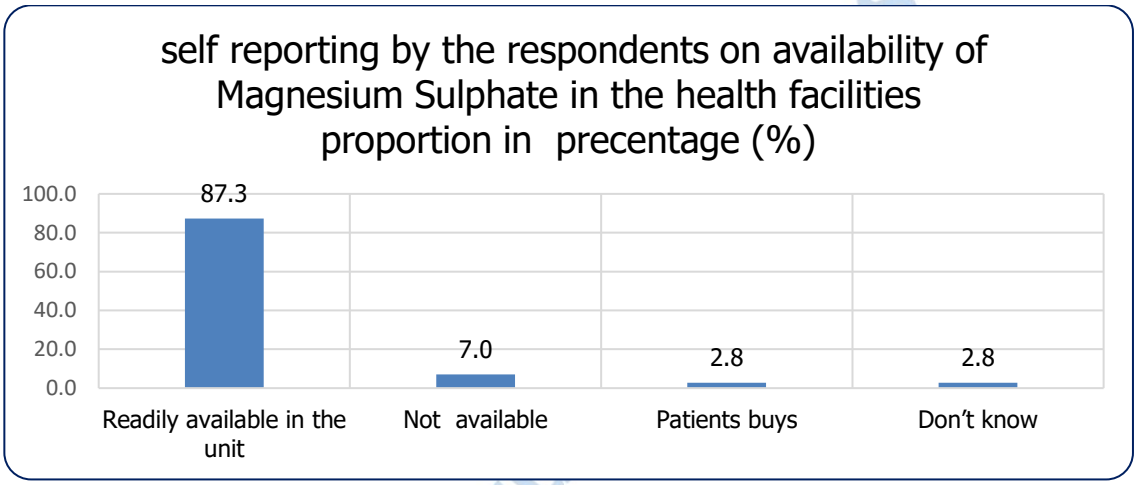


Figure 8: Showing self-reporting by the respondents on the availability of magnesium sulphate for controlling convulsion in severe PE/E in public Health Facilities Migori County Kenya 2022

Source: Field Data (2023)

The seven facilities were assessed on the level of supplies and equipment for management of PE/E using a check list.

Two facilities Awendo Sub County and and Ntimaru Sub County Hospitals did not have Calcuim gluconate And Kegonge Sub County Hospital did not have Job Aids on magnesium sulphate administration. Health Facility Related factors in utilization of the guideline for PE/E

Table 6:

Level of supplies and equipment for management of PE/E in public Health Facilities Migori County, Kenya 2022

Variables	Category	Frequency	Percentage
Availability of clinical guidelines	Yes	1	14.3%
	No	6	85.7%
Availability of antihypertensive drugs	Yes	7	100%
Hydralazine	Yes	7	100%
Nifedipine	Yes	6	85.7%
	No	1	14.3%
Methyldopa	Yes	5	71.4%
	No	2	28.6%
Availability of MgSo4	Yes	6	85.7%
	No	1	14.3%
Availability of calicium gluconate	Yes	5	71.4%
	No	2	28.6%

Availability of equipment and supplies			
Blood pressure machine	Yes	7	100%
stethoscope	Yes	7	100%
Dip sticks	Yes	7	100%
Fetal scope	Yes	7	100%
Fluids	Yes	7	100%
PE/E emergency kit /box	Yes	7	100%

Source: Field Data (2023)

4.5.3.1:Training and Support Supervision

On support supervision as far as the guideline is concerned 49(69.0%)of the nurses indicated that they had received supervision while 12(16.7%)indicated that they have never received supervision , while 8(11.3%)did not respond.

4.6 Bivariate analysis

4.6.1: The bivariate analysis between the Socio Demographic characterists of the Nurses and the Utilization of the PE/E guideline

The socio-demographic characterists that were investigated that influence the utilization of the PE/E guideline among the nurses included the age , sex, years of experience and the level of nursing training. A Chi-square calculation was done to assess the association between the sociodemographic characterists and the utilization of the guideline .A 95 % confidence level was used and significant factors were those of p value less or equal to 0.05. No significant differences were observed in term of sex, age,

years of experience and the level of nursing training. The length of time one worked in a unit had significant value were, x^2 (1,N=71) =3.387, p= 0.001 . Respondents who had worked longer in their respective units were more likely to utilize MOH guidelines as compared to those who worked for a shorter time. The study concluded that the length of time health personnel has stayed in a unit is associated with the utilization of MOH guideline. See the figure below.

Table 7: Bivaviate analysis of Socio-demographic factors associated with and the utilization of MOH PE/E guidelines in public health facilities Migori County Kenya 2022.

		Utilization of MOH Guidelines				χ^2		
		No		Yes		χ^2	df	Sig.
Gender	Male	9	18%	3	14%	.145[a]	1	0.703
	Female	41	82%	18	86%			
MCH	No	20	40%	8	38%	.022[a]	1	0.881
	Yes	30	60%	13	62%			
Labor Ward	No	31	62%	10	48%	1.253[a]	1	0.263
	Yes	19	38%	11	52%			
Postnatal Ward	No	39	78%	17	81%	.077[a]	1	0.781
	Yes	11	22%	4	19%			
In training in Emergency Obstetric Care	No	17	34%	8	38%	.109[a]	1	0.742
	Yes	33	66%	13	62%			
in-service training in Focus Antenatal Care	No	14	28%	5	24%	.133[a]	1	0.716
	Yes	36	72%	16	76%			
in-service training in Targeted Postnatal Care	No	32	64%	10	48%	1.642[a]	1	0.2
	Yes	18	36%	11	52%			

Professional qualifications	KRCHN	33	66%	17	81%	1.596[a]	2	0.45
	Enrolled Nurse /Midwife	8	16%	2	10%			
	BSc Nurse	9	18%	2	10%			
Age	Years	37.41 + 8.918		35.42 + 7.010		0.873	65	0.386
Healthcare work experience	Years	9.70 + 7.34		10.14 + 6.08		-0.241	67	0.81
Period worked in Facility	Years	4.39 + 5.76		5.33 + 5.72		-0.599	61	0.551
Period worked in Unit	Years	1.69 + 1.09		3.04 + 1.85		-3.387	54	0.001

Source: Field Data (2023)

4.6.2 The bivariate analysis between the nurses knowledge of the MOH PE/E guideline and the utilization of the MOH PE/E guideline

The Chi-square test of independence was performed to examine the relationship between comprehensive knowledge on MOH guideline for PE/E and its utilization on management for PE/E the relation between these variables was significant, x^2 (1, N=71)=19.694 ,p=0.000 where by the respondents who had high level of comprehensive knowledge on the guideline were likely to utilize it compared to those with low level. See table 8 below

Table 8: Nurses knowledge of the MOH PE/E guideline and the utilization of the MOH PE/E guideline public health facilities Migori county Kenya, 2022

	Utilization of MOH Guidelines	$\chi 2$		
		value	df	sig

In your institution is support supervision provided on the use of this guideline?	No	7	16.7%	7	33.3%	2.250[a]	1	.134
	Yes	35	83.3%	14	66.7%			
Comprehensive Knowledge on MoH Guidelines	No	43	86.0%	7	33.3%	19.694[a]	1	.000
	Yes	7	14.0%	14	66.7%			

Source: Field Data (2023)

4.6.3 The bivariate analysis between the nurses perception of the PE/E guideline and the utilization of the MOH PE/E guideline

To examine the association between utilization of the MOH guideline for prevention and management of PE/E and the respondents perception across seven statements ,a series of Chi-square tests were conducted where five of the seven statements were statistically significant.

4.5.3.1 Improved knowledge on management of PE/E

Chi -square test revealed a statistically significant association btween full utilization of the MOH PE/E guideline and improved knowledge on management of patients with PE/E x^2 (1, N=71) =2.18, p = 0.002. With respondents who were fully utilizing MOH guideline having higher scores compared to those who were not utilizing it in full.

4.6.3.2 Complexity and length of Guidelines

The statement “the guidelines are very complex, long not easy to follow” is statistically significant indicating association the utilization of Moh guideline for PE/E with Chi-square of x^2 (1, N= 71) =2.01, p = 0.026. With respondents who were fully utilizing MOH guidelines having lower scores compared to those who were not utilizing it in full.

4.6.3.3 Clarity and Ease of guidelines

The statement “The guidelines are written in a simple term, they are clear and easy to follow” was statistically significant in association with the utilization of MOH guideline with prevention and management of PE/E with Chi-square test x^2 (1,N= 71)=2.08, p = 0.005. With respondents who were fully utilizing MOH guidelines having higher scores compared to those who were not utilizing it in full.

4.6.3.4 Recommendation to other Health Care providers

The statement “I would highly recommend the utilization of these guidelines to other skilled health care providers” was statistically significant in association with the utilization of the MOH guideline in prevention and management of PE/E ,x^2 (1,N=71)= 1.58, p = 0.027. With respondents who were fully utilizing MOH guidelines having higher scores compared to those who were not utilizing it in full.

4.6.3.5 General Perception of Guidelines

The overall ,nurses reported positive perception of the guideline. The recommendations for other skilled health care providers which was statistically significant association ,reflecting from strong support from those respondents utilizing the MOH guideline for prevention and management of PE/E.

The above Chi-square results indicate that full utilization of the MOH guideline for PE/E is significantly associated with positive perception regarding their clarity ,ease of use and recommendation potential.

4.7 Discussions

The objective one of this study was based on level of utilization where the adherence of the respondents to the MOH PE/E guideline showed that 97.1% of the nurses self-reported that they adhered to the MOH PE/E guideline . When the audit of the patients records was done it indicated that overall adherence was at 30 %. This is similar to a audit was done on patients records in Pumwani Hospital among the health workers

which showed that overall adherence to the MOH guideline was 31.4% (Muchiri 2015). Omboga also did a study at Garrisa County Referral Hospital among the health care providers on use of MOH guidelines in the management severe PE/E which showed that 43(89.5%)of the nurses self-reported that they follow the guideline while managing these patients yet the ad showed poor adherence to the guidelines thus resulting in high maternal morbidity and mortality. (Omboga,2014).

For this study the most adhered to protocol among the 11 items on the guideline was use fetal heart monitoring , magnesium sulphate administration which was at 96.7% ,the use of antihypertensive was at 93.3%. . The same was found in study at Mbarara referral hospital in Uganda on adherence and challenges in implementing national guideline on management of severe preeclampsia and eclampsia by health workers where 72 records of women with severe PE/E was audited and the results showed that adherence to antihypertensive drugs was 100% , while magnesium sulphate was 93.1%. (Atuheire, Wanyenze & Groves 2022). The urgency and critical nature of addressing severe preeclampsia and eclampsia could account for the immediate administration and documentation of medications.

When the audit of the women record on management of Severe PE/E was done it indicated that overall adherence was at 30%. This is similar to a audit was done on patients records in Pumwani Hospital among the health workers which showed that overall adherence to the MOH guideline was 31.4% (Muchiri ,2015).

On sociodemographic the study indicated that of the nurses who participated in the study the average number of years worked in the health care sector for the respondents were 6.9 years while the average age worked within the health facility was 5.

A study on management of PE/E among health care providers in a hospital in Lagos Nigeria revealed that health care providers with more years of practice had higher level

of knowledge of PE/E (Olaoye, Oyerinde ,Elebuyi & Ologun , 2019).

For nurse related factors on the utilization of the MOH PE/E guideline one of the variables was the level of the knowledge of the Nurses . In this study the respondents' knowledge on management of PE/E stood at 21 (30%) for those who were able to answer all the questions correctly and most of the respondents that is 50 (70%) were not able to answer all the questions correctly. Although the study showed that most of the nurses had undergone several trainings, with 73.2% of them had been trained on Focus Antenatal care, and 64.8% were trained in EMO**C , i**n these trainings the management of PE/E is covered the study. The study also showed that only 43.5% of the participants had been trained in the last 6 months. Those who were not trained or could not recall when they were trained were 30%. Those trained between 2 to 5 years were 36.4%, this could be the reason as to why the those who were able to answer all the questions correctly was low as this study depended on recall of memories. This is in line with the study by the Population Council on "addressing Barriers to quality of underutilized commodities and services for prevention and management of preeclampsia and Eclampsia in Kenya" which showed that some health care providers lacked knowledge despite the availability of policy guidelines, training materials and Job aids.(Ndwinga , 2018).

A study done in Dodoma region of Tanzania to evaluate the knowledge of prevention and management of preeclampsia and eclampsia in primary health setting among nurses reported out of 172 nurses interviewed only 88 (52.1%) were found to have adequate knowledge(Joho, *et al* ,2020). The research carried out in Lagos Island Maternity Hospital to assess the knowledge, perception and management of preeclampsia among the health care providers which reported that majority of the respondent's good knowledge on preeclampsia which was at 81.3% (Olaoye, *et al.,* 2019).

On the knowledge on the control of hypertension in preeclampsia and eclampsia, majority of the respondents were able to state the standard drugs for controlling the blood pressure as per MOH guideline 37 (52.1%) of the respondents stated that Nifedipine was the drug of choice 36 (50.7%) of respondents stated hydralazine (Apresoline) 24(33.8%) stated methyldopa and 8(11.3%) Labetalol. This is in line with research done in Dodoma region in Tanzania which showed 86% the nurses were able to recognize the drug of choice for management of blood pressure (Joho, *et al,* 2020).

Magnesium Sulphate (MgSO4) gains widespread recognition and usage in the medical field, particularly concerning the management of preeclampsia and eclampsia, both of which present perilous threats to maternal and fetal well-being. According to the globally acknowledged guideline from the World Health Organization and further supported by the Kenyan Ministry of Health, MgSO4 has been earmarked as a paramount intervention for both the prevention and treatment of eclampsia and severe preeclampsia. Its effectiveness not only stems from its direct impacts but also its prompt application during emergent situations.

A considerable percentage of nursing professionals acknowledge the pivotal role of MgSO4 in managing these hypertensive disorders. A staggering 97.2% were aware of MgSO4's standing as the preferred drug for managing eclampsia and severe preeclampsia. Furthermore, the antidote for MgSO4 toxicity, Calcium Gluconate, is recognized by 95.8% of the nursing community, indicating a profound awareness of the management and counteractive measures related to MgSO4 administration.

To delve deeper, it is instructive to draw parallels and contrasts with various studies that scrutinize nursing acumen regarding MgSO4 utilization. For instance, a study by Tadele et al. (2020) circumscribes knowledge and practices among nurses in a gynecological emergency hospital in Addis Ababa. This study echoed similar sentiment whereby 75

96.2%) of nurses affirmed MgSO4 as their drug of choice for subduing convulsions, and 67% identified Calcium Gluconate as the requisite antidote for mitigating magnesium toxicity.

Conversely, Soliman *et al.* (2021) presented somewhat divergent findings in their research at Benha University Hospital in Egypt. The study, focusing on assessing nursing knowledge and practices regarding evidence-based use for managing pregnant women with preeclampsia, illuminated that a mere 41.7% of nurses showcased adequate knowledge. Furthermore, only 26.7% could accurately identify the drugs utilized in preeclampsia management, suggesting geographical disparities in knowledge and perhaps reflecting discrepancies in training and educational paradigms across regions.

Preeclampsia and eclampsia symbolize significant risks during pregnancy, underscored by the onset of hypertensive disorders that could spiral into severe complications if not immediately and effectively managed. The frontline of this management often falls within the remit of nursing professionals, who, in myriad instances, are the immediate responders during hypertensive emergencies in obstetric contexts. Thus, the knowledge and adeptness in utilizing MgSO4, with the cognizance of its efficacy and potential risks, become paramount.

Ensuring that nursing professionals are not only aware of the guideline-endorsed use of MgSO4 but also proficient in its application and management of potential side effects, is crucial. The robustness of training programs, consistent updates to medical guidelines, and continuous professional development programs become instrumental in maintaining and elevating this knowledge. The aforementioned studies also spotlight the potential voids and lapses that may exist in certain geographical locales or within specific medical training frameworks, emphasizing a call to action to bolster educational initiatives in these domains.

Navigating through the complexity of managing preeclampsia and eclampsia, the role of MgSO4 transcends its pharmacological utility, embedding itself as a pivotal player in safeguarding maternal and fetal health. The empirical evidence, outlined in varying research contexts, underlines the indispensable nature of comprehensive knowledge and skillful application of MgSO4 among nursing professionals. Guidelines in medical practice serve as a beacon, steering healthcare professionals towards evidence-based and streamlined patient management, especially in complex obstetric conditions like preeclampsia and eclampsia (Smith & Jones, 2020).

Many healthcare professionals, particularly nurses, perceive these guidelines as indispensable tools that not only bolster their knowledge but also enhance the practical care provided to patients. This highlights the pivotal role guidelines play in refining clinical practices and advocating for their adoption across various healthcare spheres (Johnson *et al*., 2019).

A study conducted in the Dominican Republic, which scrutinized the acceptability and application of clinical practice and treatment protocols concerning preeclampsia among healthcare providers, disclosed that a majority of medical and nursing staff were not only aware of but also exhibited a positive attitude towards its implementation (Rosa & Morda, 2021).

Conversely, another study situated in Turkey, aimed at deciphering the opinions of nurses and midwives on the deployment of clinical guidelines in obstetrics and gynecology, unveiled that a staggering 97.5% of participants found the guidelines beneficial, attesting to their capability to streamline and economize patient care (Ozan, Duman, & Isik, 2019).

On health facility related factors that influence the utilization of the guideline the availbility of the guideline is key. In this study only one facility had the National guideline for Obstetric and perinatal care book in which the guideline of prevention and

management of PE/E which is found on page 85. The book was of 2011 edition. 5 facilities had a Job Aids on magnesium sulphate administration hanged on the labour room in maternity. Two facilities had printed the job aid on magnesium sulphate usage on the client's antenatal book. The same findings were observed in a survey carried out in 2015 at the Antenatal clinic sites in seven states in Nigeria by Population Council to assess the utilization of the Nigerian guidelines on management of preeclampsia and the results showed that the clinical guidelines and protocols were not available in the health facilities. Of the health facilities visited about 80 percent did not have protocols and national guidelines for the management of PE/E which is a requirement by the Ministry of Health (Kirk *et al.*, 2019). Although a research by Nkamba *et al* in 2020 to assess the facility readiness in management of preeclampsia in Kinshasa in Democratic Republic of Congo indicated that the guidelines were available in 51.2% of the of the facilities this results was higher compared to this research and the one in Nigeria.

The intricate complexities embedded within the diagnosis and management of Preeclampsia/Eclampsia (PE/E) necessitate healthcare facilities to be primed with both fundamental knowledge and indispensable equipment. Throughout various healthcare facilities, there emerges a distinct pattern in the possession and allocation of critical diagnostic tools, notably, the dipstick for proteinuria testing in PE/E screening and management. In an investigative study across diverse healthcare facilities, it was elucidated that all surveyed facilities 7 (100%) were equipped with dipsticks for proteinuria testing, a statistic that ostensibly implies a favorable diagnostic readiness. However, a meticulous breakdown reveals that only 1 (14.3%) of these, specifically the Migori Teaching and Referral Hospital, had the dipsticks readily available in the maternity ward, while the predominant 6 (85.3%) relegated these diagnostic tools to the laboratory.

Contrastingly, a study undertaken in Kinshasa, Democratic Republic of Congo, exploring the readiness of health facilities in PE/E management, illustrated that dipsticks were available in 55% and 52.9% of the facilities, representing a statistical difference that invites contemplation on the variables influencing such disparities (Nkamba *et al.*, 2020). The divergence in resource availability between diverse geographical and socio-economic contexts unveils a multifaceted narrative that encompasses factors like healthcare funding, policy-making, priority-setting, and healthcare infrastructure development. Such disparities underscore the imperative to bridge the gaps in global healthcare readiness, especially in managing conditions that present with the potential urgency of PE/E.

A comprehensive approach towards managing Preeclampsia/Eclampsia (PE/E), a critical condition with potential far-reaching repercussions for both mother and child, mandates astute attention to therapeutic interventions. The availability and utilization of anti-hypertensive drugs within healthcare facilities become particularly pivotal in efficaciously navigating through the medical challenges posed by severe PE/E. In an encompassing exploration into healthcare facilities, it was discerned that anti-hypertensive drugs were ubiquitously available, underscoring their recognized importance in PE/E management. Notably, hydralazine was present in all surveyed facilities 7 (100%), followed by nifedipine 6 (85.7%), and methyldopa 5 (71.4%). The widespread availability of hydralazine is likely attributed to its status as a first-line therapeutic agent in mitigating hypertension amidst severe PE/E scenarios.

Conversely, a study situated in Kinshasa depicted a starkly different landscape, revealing that the availability of anti-hypertensive drugs, such as hydralazine and nifedipine, was markedly lower, recorded at 5.9% and 23.5% respectively (Nkamba *et al.*, 2020). This stark disparity invites a meticulous exploration into the myriad factors influencing

healthcare provisioning and resource allocation across different geographical and socio-economic contexts.

Moreover, while the availability of these anti-hypertensive drugs is undoubtedly critical, it's equally paramount to delve into their practical utilization within clinical settings. How do healthcare professionals navigate through therapeutic decision-making processes in managing severe PE/E, especially when multiple pharmaceutical options are available.

Magnesium sulfate for preventing and controlling convulsion in severe PE/E was available in all the 7 (100%) of the health facilities and calcium gluconate which is the antidote for magnesium sulphate toxicity was in 5 (71.4%) of the health facilities in this study.

This was a good indication compared to a study done by Population Council in 2015-2016 on public facilities in Kenya and Ethiopia which indicated that most of the health facilities lacked essential equipment, magnesium sulphate and antihypertensive drugs. (Warren *et al* ., 2018). A another study on facility assessment in Adis Ababa, Ethiopia indicated that only 48% of the facilities had magnesium sulphate , diazepam was the main drug in use for controlling convulsion with 78.6% of the facilities having diazepam in stock ,while calcium gluconate was found in 24.3% of the facilities (Meazar *et,al*., 2022).

Equipment and supplies like the blood pressure machines , stethoscope , fetal scopes and intravenous fluids were available in all the 7 (100%)of the health facilities ,the same results were found in the Kinshasa study done by Nkamba *et, al*., (2020) which was also at 100 % of the facilities.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary per each objective, conclusion and recommendations that are in line with the study findings.

5.2 Summary of Findings

The main objective for this study was to assess the utilization of the guideline in managing pre-eclampsia and eclampsia among the nurses in public health facilities in Migori County.

5.2.1 The level of the adherence to the MOH guideline.

The level of adherence among the nurses was low at 30% although 91.7% of the nurses on self-reporting stated that they use the MOH guideline on PE/E management**.**

5.2.2 Sociodemographic characterists of the respondents

The respondents years worked in health care ranged from 6.9 to 9 years and worked in a facility ranged from 4 to 5.7 years while those worked in a unit ranged from 1.5 to 2 years.

5.2.3 The nurse related factors that influence the utilization of the MOH guideline

The findings of this study indicated that the only social–demographic variable which had a statistical significance to the utilization of the MOH guidelines was years worked within the unit.

The respondent's knowledge on the MOH guideline for the management of PE/E was poor with only 30 % of the nurses having good knowledge of the guideline. The

perception of the nurses towards the MOH PE/E guideline was good with majority stating that they would recommend other health providers to use the guideline.

There was no association between the level of training and the utilization of the MOH guideline**.**

5.2.4 Health Facility related factors that influence the utilization of the MOH guideline

Majority of the health facilities did not have the MOH guideline for PE/E management. What was available in the health facilities was the job aids for administration of magnesium sulphate.

The low level of adherence and poor knowledge of the respondents on PE/E management could be attributed to lack of frequent trainings and CME and lack of MOH guideline for PE/E in the facilities. During the FGD at Awendo Sub County Hospital the respondents stated that the last training they had was in late 2019 and the last CME on PE/E was in Jan 2021.

5.3 Conclusion

The majority of the respondents' knowledge on PE/E guideline was low and also the adherence to the MOH PE/E guideline was poor although their attitude towards the utilization of the MOH guideline was good.

The health facility factors indicated that the MOH guideline for PE/E was missing in most of the health facilities ,most of the facilities had job aids on how to administer Magnesium sulphate. The level of drugs for management of PE/E was good with all the facilities having antihypertensive drugs and magnesium sulphate. Most of the facilities had calcium gluconate which is an antidote for magnesium sulphate. Equipment like the blood pressure machines, dipsticks, eclamptic set or boxes for managing eclampsia were available all the health facilities.

These findings add to the previous studies which have shown that the utilization of of the guideline by the nurses is affected by the knowledge, and the availability of the guideline.

5.4 Recommendations of the Study

To increase the level of utilization of PE/E guidelines there should be a continuous training of nurses in maternity and MCH on MOH PE/E guidelines.

For nurse related factors there is need to have training for the newly qualified nurses.

There is need to capture those who have never received support supervision and those ones who have not been trained in order to increase their knowledge on management of PE/E.

For the health facility related factors. The guideline should made available and displayed in maternity and MCH. The current guideline should be updated .Also the availability of internet network within the public health facilities can assist improvement of nurses knowledge and practice.

5.5 Reformations for Further Studies

Further studies to be conducted on the use of MOH PE/E guideline among all the health care providers within these public health facilities

REFERENCES

African Institute for Development Policy. (2017). *Health of mothers, babies, and children in Migori County, Kenya*. Nairobi: Kenya.

Angelina,J.,Kibusi,M.S.,Mwampagatwa,I.,Ernest ,A.(2020).Knowledge prevention and management of preclampsia and eclampsia among nurses in primary health facilities:baseline findings an interventional study Dodoma region Tanzania.*EastAfricaHealthResearch Journal,4(1)*.https://doi.org/10.2428/eahrj.vi1.619

Ajzen, I. (1991). The theory of planned behavior. In M. Kouchaki (Ed.), *Organizational behaviour and human decision process 50*. 179-211). University of Massachusetts, Amherst: Elsevier.

Ameh, C. A., White, S., Dickson, F., Mdegela, M., Madaji, B., & van den Broek, N. (2018). Emergency obstetric care training and knowledge retention: A multi-country longitudinal study. *PLoS ONE, 13*(10), e0203606. https://doi.org/10.1371/journal.pone.0203606

Aynalem, Z., Yazew, K., & Gebrie, M. (2020). The use of evidence-based practice and related variables by nurses employed at Ethiopia's Amhara Region Referral Hospitals. *PLoS ONE, 15*(3), e0248834. https://doi.org/10.1371/journal.pone.0248834

Bahl, P. (2016). Reducing the risk of maternal mortality in Kenya by comparing the mortality rate from preeclampsia in Kenya with the United States. University of Arizona. http://hdl.handle.net/10150/612565

Bazzano, A., Green, E., Madison, Barton, A., Gillispie, V., & Bazzano. (2015). AGREE II is used to evaluate the content and quality of national and international recommendations on hypertensive disorders of pregnancy.

BMJ Open, 6(1), e009189. https://doi.org/10.1136/bmjopen-2015-009189

Black, T., Balneaves, G., Garossino, C., Puyat, J. H., & Qian, H. (2015). Encouraging evidence-based practices by offering point-of-care clinicians research training. *Journal of Nursing Administration, 45*(1), 14-20. https://doi.org/10.1097/NNA.0000000000000151

Blume, K., & van Weer, W. (2016). Guideline adherence: How do boards of directors deal with it? A survey in Dutch hospitals. *Journal of Hospital Administration, 5*(5). https://doi.org/10.5430/jha.v5n5p21

Browne, L., & van (2015). Criteria-based quality audit of care provided to women in a Ghanaian referral hospital who have severe preeclampsia and eclampsia. *PLoS ONE, 10*(4), e0125749. https://doi.org/10.1371/journal.pone.0125749

Butalia, S., & Audibert, F. (2018). Blood pressure: The 2018 Canadian guidelines for pregnancy-related hypertension management. *Canadian Journal of Cardiology, 34*(5), 526-531. https://doi.org/10.1016/j.cjca.2018.02.021

Cohen, L., Manion, L., Morrison, K. (2011). Research methods in education, (7th Ed.), Routledge. New York.

Cooper, D., & Schindler, P. (2008). Business Research Methods. New York: McGraw-Hill/Irwin.

Danmusa, S. (2016). Magnesium sulfate therapy of pre-eclampsia and eclampsia in Nigeria is being expanded. Washington, DC: Population Council.

De La Rosa, A., Mordan, J., Barinas, I., Toribio, M., Mancebo, D., Rodríguez, A., & Herero, P. (2021). Acceptability and adoption of clinical practice guidelines and treatment protocols on preeclampsia/eclampsia in the Dominican Republic. *Revista Panamericana de Salud Pública, 45*, e8.

https://doi.org/10.26633/RPSP.2021.8

De Vera, R., & Uyheng, J. (2018). Study on the knowledge and management practice of hypertension in pregnancy among midwives in different public health centres of Cebu City. *Philippine Journal of Obstetrics and Gynaecology*, *41*(6), 1-15.

El-Sayed, Y., & Borders, A. (2017). Emergent treatment for severe hypertension with an abrupt start during pregnancy and the postpartum phase. *Obstetrics & Gynecology,129*(4),e90-e95. https://doi.org/10.1097/AOG.0000000000002019

Fischer, F., Lange, K., Klose, K., Greiner, W., & Kraemer, A. (2016). Barriers and strategies in guideline implementation – A scoping review. *Healthcare*, *4*(3), E36. https://doi.org/10.3390/healthcare4030036

Gagliardis,A.R.,Brouwers,M.C.,Palda,V.A,.CCharles ,L.L.,J.M.(2011).How can we improve guideline use?.AConception framework of implementability.*Implementation Sci 6 (26),2011*.https://doi.org/10-1186/1748-5908-626

Hossain, S. (2016). The current state of preeclampsia and eclampsia prevention and treatment. MHTF Blog. Boston, United States of America: Harvard T.H. Chan School of Public Health.

Hoyiso, D., Arega, A., & Markos, T. (2018). The use of evidence-based nursing practice and related variables by nurses employed in public hospitals in Jimma zone, located in Southwest Ethiopia. *International Journal of Nursing and Midwifery, 10*(5), 47-53. https://doi.org/10.5897/IJNM2017.0294

Ishaku, S. (2017). Pre-eclampsia and eclampsia in three states in Nigeria were

analyzed after an intervention. Washington, DC: United States of America.

Joho, A., Kibusi, S. M., Mwampagatwa, I. H., & Ernest, A. (2020). Findings from a baseline study of an intervention in the Dodoma region of Tanzania on nurses' knowledge of how to prevent and treat eclampsia and preeclampsia in primary care settings. *East African Health Research Journal*, *4*(1), 133. https://doi.org/10.24248/eahrj.v4i1.619

Jones, J. A., & Reeve, C. A. (2018). Interview-based case study of factors affecting general practitioners' adherence to clinical recommendations in a scenario of complicated multimorbidity. *BMC Family Practice, 19*, 157. https://doi.org/10.1186/s12875-018-0834-2

Jun, J., Konver, C., & Stimpfel, A. (2016). Clinical practice guideline adoption and implementation among nurses: A systematic evaluation of barriers and facilitators. *International Journal of Nursing Studies, 60*, 54-68.

Kerdo, T., Bernhardsson, S., & Grimmer, K. (2016). The state of clinical guidelines as of right now: Your guide. *International Journal of Quality in Health Care, 28*(1), 122-128. https://doi.org/10.1093/intqhc/mzv115

Kieffer, M. (2015). Challenges to and opportunities for CPG implementation in North American nursing practices. *Nursing, 50*(2), 327-345. https://doi.org/10.1016/j.cnur.2015.03.007

Kirk, J., Siverten, D., Petersen, J., & Peterson, H. (2016). Barriers and facilitation for implementing a new screening tool in emergency department: A qualitative study applying the Theoretical Domain Framework. *Journal of Clinical Nursing, 25*. https://doi.org/10.1111/jcn.13275

Kirk, K., & Chattopadhyay, I. (2015). Preeclampsia and eclampsia in Nigeria: A

systematic assessment of current practices in diagnosis, treatment, and management. Washington, DC: Population Council.

Kenya National Bureau of Statistics (KNBS). (2015). Kenya Demographic and Health Survey 2014: Key indicators. Nairobi: KNBS, MOH, NACC, KEMRI & NCPD.

Kenya National Bureau of Statistics (KNBS). (2019). 2019 Kenya Population and Housing Census Volume 1: Population by county and sub-county. Nairobi, Kenya.

Kredo,T.,Bernhardsson,S,.Machingaide,S,.Young,T,.Louw,Q,.Ochodo,E,.&Grimmer,K.(2016).Guide to clinical practice guidelines :The current state of play .*International Journal for Quality in Health Care ,28(1),*122-128.https//:doi.org/10.1093/intghc/mzv115

Long, Q., Oladapo, O. T., Healherisce, S., Vogel, J. P., Carroll, G., Lumbiganon, P., ... Gulmezoglu, A. M. (2017). Clinical practice pattern on the use of magnesium sulfate for the treatment of preeclampsia. *BJOG*. https://doi.org/10.1111/1471-0528.14400

Lowe, S. A., Bowyer, L., Lust, K., McMahon, L., Morton, M., North, R. A., & Said, J. (2016). SOMANZ guidelines for management of hypertensive disorders of pregnancy 2016. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, *55*(5), e1-e29. https://doi.org/10.1111/ajo.12399

Marita, B. (2019). Kenya's health structure and the six levels of hospitals – RoGGKenya. Action for Transparency.

Melnyk, B. (2016). Widespread adoption of evidence-based practice is essential for growing Medicare population. *AMJ Managed Care, 13*(1), 614.

https://doi.org/10.1111/wvn.12133

Ministry of Health & National Council for Population and Development. (2016). 2015 Kenya Health Facility Assessments: An assessment of availability of family planning and maternal/reproductive commodities and services. Nairobi, Kenya: Author.

Ministry of Health & Government of Kenya. (2016). Health of pregnant women, babies, and teens in Kenya (RMNCAH) Investment Framework. Nairobi, Kenya: Ministry of Health.

Ministry of Public Health and Sanitation & Ministry of Medical Services. (2012). The National Guideline for Quality Obstetrics and Perinatal Care. Nairobi, Kenya: Ministry of Health.

Ministry of Health Kenya. (2017). Saving Mothers' Lives 2017: First Confidential Report into Maternal Deaths in Kenya 2017. Nairobi, Kenya: Ministry of Health.

Muchiri, D. (2015). Compliance with Pumwani Maternity Hospital's Ministry of Health guidelines for the management of severe preeclampsia and eclampsia. Nairobi, Kenya: University of Nairobi.

Mugenda, O.M. & Mugenda, A.G. (2003). Research Methods, Quantitative and Qualitative Approaches. . Nairobi: Acts Press.

Murry, M. (2016). Handbook of Qualitative Health Research for Evidence-Based Practice. New York: Springer.

National Council for Population and Development. (2016). An evaluation of the availability of family planning and maternal/reproductive health commodities, including medication and services, is conducted at Kenya health facilities. Nairobi, Kenya.

Ndwinga, N., Ndwiga, C., Osoti, A., Pooja, S., Odwe, G., & Warren, C. (2018). Retrospective cohort study comparing the characteristics of early-versus late-onset preeclampsia and eclampsia at Kenyatta National Hospital. *Pregnancy Hypertension, 13*, 75. https://doi.org/10.1016/j.pregh.2018.08.223

Neher, M., Stahl, E., Festin, K., & Nilsen, P. (2016). Implementation of evidence-based practice in rheumatology: What sociodemographic, social cognitive, and contextual factors influence health professional use of research in practice? *J Rheum Dis Treat, 2*, 039. https://doi.org/10.23937/2469-5726/1510039

Nkamba, D., & Robert, A. (2020). In Kinshasa, Democratic Republic of the Congo, provider expertise and health facility preparedness are related to proper pre-eclampsia diagnosis and treatment. *BMC Health Services Research, 20*, 572. https://doi.org/10.1186/s12913-020-05795-1

Olaoye, T., Oyerinde, O., Elebuyi, O., & Ologun, S. (2019). Knowledge perception and management of preeclampsia among health care providers in a maternity hospital. Ogun State, Nigeria: Babcock University.

Omboga, J. (2015). The Garissa Provincial General Hospital uses of national guidelines in the management of severe preeclampsia and eclampsia. Nairobi, Kenya: University.

Ozan, Y., Duman, M., & Isik, G. (2019). Opinions of nurses and midwives on the implementation of clinical practice guidelines. *International Journal of Caring Sciences, 12*(3), 1487.

Rohilla, P. (2010). Research Methodology. New Delhising: APH publishing.

Ryan, M., Leu, G., Boss, E., Raynor, E. M., & Walsh, J. (2017). Adherence to

American Academy of Otolaryngology–Head and Neck Surgery clinical practice guidelines: A systematic review. *Otolaryngology–Head and Neck Surgery, 163*(4), 626-644. https://doi.org/10.1177/0194599820922155

Saunders, M., Lewis, P., &Thornhill, A. (2012). Research methods for business students. Italy: Pearson

Soggiu-Duta, C., Popovici, D., Crauciuce, E., Crauciuc, D., & Suciu, N. (2019). Investigating nurses' knowledge about preeclamptic patients' care in a tertiary care centre in Romania. Maedica, *14*(3), 227-232. https://doi.org/10.26574/maedica.2019.14.3.227

Soliman, D., Hasneen, S., Elmoniem, S., & Ali, F. (2019). Assessment of nurses' knowledge and practice regarding the use of evidence-based for pregnant women with preeclampsia. *Journal of Nursing Science – Benha University, 49*. ISSN 2682-3934

Tadele, W., Debebe, T., Tadele, A., & Tilahun. (2020). Assessment of knowledge and practice of nurses working in gynecology emergency room towards pregnancy-induced hypertension in selected government public hospitals found in Addis Ababa, Ethiopia. https://doi.org/10.21203/rs.3.rs-25189/v1

Tessema, G. A., Gomersall, J., Laurence, C. O., & Mahmood, M. A. (2019). Health care providers' perspective on the use of the national guidelines for family planning services in Amhara Region, Ethiopia: A qualitative study. *BMJ Open, 9*, e023403. https://doi.org/10.1136/bmjopen-2018-023403

Townsend, R., O'Brian, P., & Khalil, A. (2016). Current best practice in the management of hypertensive in pregnancy. *Integrated Blood Pressure*

Control, *9*, 79. https://doi.org/10.2147/IBPC.S77344

Vogel, J. P., Souza, J. P., Mori, R., Morisaki, N., Lumbiganon, P., Laopaiboon, M., & Gulmezoglu, A. (2015). Maternal and perinatal morbidity and mortality: Findings from the WHO multicountry survey on maternal and newborn health research network. *BJOG, 122*(3), 451-464. https://doi.org/10.1111/1471-0528.13036

Von Dadelszen, P., & Magee, L. A. (2017). Strategies to reduce the global burden of direct maternal deaths. *SAGE Journals*. https://doi.org/10.1177/1753495X16686287

Voussden, N., Lawley, E., Seed, P. T., Gidiri, F. M., Goudar, S., Sandall, J., Chappell, L. C., & Shennan, A. H. (2019). Incidence of eclampsia and related complications across low and middle-resource geographical regions: Secondary analysis of a cluster randomised controlled trial. https://doi.org/10.1371/journal.pmed.1002775

Warren, C., Kirk, K., & Dempsey, A. (2015). An examination of the preeclampsia and eclampsia landscape in Bangladesh. Washington, DC: Population Council.

West, P. (2016). Simple random sampling of individual items in the absence of a sampling frame that lists the individuals. *New Zealand Journal of Forestry Science*, *46*, 15. https://doi.org/10.1186/s40490-016-0071-1

Witter, S., Namakula, J., Wurie, H., Chirwa, Y., So, S., Vong, S., ... Theobald, S. (2017). The gendered health workforce: Mixed methods analysis from four fragile and post-conflict contexts. *Health Policy and Planning*, *32*(5), 52-62. https://doi.org/10.1093/heapol/czx102

World Health Organization. (2019). *Trends in maternal mortality: 2000 to 2017*.

Geneva:Author

World Health Organization. (2014). *WHO recommendations for the prevention and treatment of preeclampsia and eclampsia: Implications and actions.* Geneva: Author.

Zemdeu, T., Teshome, A., Tadesse, Y., Bekele, A., Keyes, E., Barley, P., & Ruano, A. (2019). Health care workers' clinical knowledge on maternal and newborn care in Ethiopia: Findings from 2016 national EmONC assessment. *BMC Health Services Research, 19,* 915. https://doi.org/10.1186/s12913-019-4758-x

APPENDICIES

Appendix I: Consent Form for Skilled Health Care Provider

Subject: Request for Participation in a Vital Maternal Health Study

Good [Morning/Afternoon],

My name is Selestine Odanga, and I am an aspiring Master's Degree candidate in Nursing at Mount Kenyan University. I am reaching out to kindly solicit your invaluable participation in a pivotal research study concerning the practical application of the Kenya Ministry of Health guidelines pertaining to the prevention and management of preeclampsia and eclampsia by nursing professionals.

Objective of the Study: Objective of the Study:

This research endeavors to meticulously investigate the assimilation and implementation of the aforementioned guidelines by nurses within public health facilities, with a focal point in Migori County. The study seeks to glean insights into the organizational structures and service provision frameworks in place regarding preeclampsia and eclampsia, two critical maternal health conditions.

Your Participation: We extend our invitation to you to be a part of this vital research, which will necessitate your completion of a questionnaire, anticipated to require approximately 10 minutes of your time. We assure you that this questionnaire does not retain any information concerning your identity.

Potential Risks: We acknowledge that some questions might prompt discomfort due to their probing into certain aspects of your professional engagement.

Benefits of Participation: Your contribution is imperative, as the findings of this study will potentially influence the enhancement of maternal and healthcare services within Migori County. Furthermore, it aims to provide substantive data that can aid county

health managers in their strategic planning and policy formulation to bolster healthcare provision.

Assurance of Confidentiality: Your responses will be held in the strictest confidence and will not be accessible to anyone within your facility, including your supervisory personnel.

Voluntary Participation: Your involvement in this research is wholly voluntary. You reserve the right to abstain from answering any question and may withdraw your participation at any point without any impact on your professional standing or employment.

Participant's Acknowledgment: [Ensure to facilitate a method for participants to affirm the following:] "I have comprehended the above stipulations regarding my participation. I have been provided an opportunity to present any queries, which have been addressed satisfactorily. I am aware that my provided information will be confidential and acknowledge that I can retract my participation at any juncture. I willingly volunteer to participate in this study."

Do you have any questions? Yes /No(If yes, note the questions) --

--------Signature of the participant ---------- Signature of the Witness ----------

Appendix II: Questionnaire for the Nurses

UTILIZATION OF THE MOH GUIDELINE FOR PREVENTION AND MANAGEMENT OF PREECLAMPSIA AND ECLAMPSIA BY THE NURSES IN PUBLIC HEALTH FACILITIES MIGORI COUNTY.

For each question there are number of possible responses, Please indicate by ticking where it applies against each response. A space is provided for other possible response not covered in the numbered options.

FACILITY IDENTIFICATION

Name of the facility ----------

SOCIO DEMOGRAPHIC F A C T O R S

1: Age in years ---------- (Fill the blanks)

For the following questions tick the correct one

2: Indicate your Gender: Male ☐ Female ☐

4: Where are you currently working?(Please tick all that apply)

a) MCH ☐ Labor ward ☐ c)Postnatal ward ☐

5: What are your professional qualifications?

a) Kenya Registered Community Nurse (KRCHN) ☐

b) Enrolled Nurse /Midwife ☐

c) Bsc Nurse ☐

b) Others specify----

c) 6: For how many years have you worked in

a) Health care ---------- b) this Facility ----------c)This unit-------

SECTION 2: THE NURSE RELATED FACTORS IN UTILIZATION OF THE PE/E GUIDELINE

7: Have you received any in-service training in the following areas of maternal health care

(,TICK ALL THAT APPLY)

a) EMOC { Emergency Obstetric Care) ☐

b) Focus Antenatal care ☐

c) Targeted postnatal care ☐

d) Others ☐ specify ----------

8: Are you aware of the existence of MOH Guideline for management of preeclampsia and eclampsia in your facility

a) Yes ☐

b) No ☐

9: In your institution is this Guideline being followed when managing preeclampsia and eclampsia?

a) Yes ☐ b) No ☐ c) Don't know ☐

If NO which other alternative is being used? ----------

10: In your institution are nurses trained on the use of these Guidelines?

a)Yes ☐ b) No ☐

If yes, when were you last trained ?

a) 1-6 months ☐ b) 7-12 months ☐ c) 2- 3years ☐ d) Cannot Recall ☐

11:In your institution is support supervision provided on the use of these guidelines?

a) Yes ☐ b) No ☐ c) I don't know ☐ d) Others ☐ Specify----------

12: Preeclampsia is characterized by when a pregnant woman present with (***TICK ALL THAT APPLY)***

a) Anew onset of hypertension after 20 weeks of gestation ☐

b)A systolic blood pressure which is equal to or greater than 140mmhg on two readings ☐

c) A diastolic blood pressure of greater than or equal to 90mmhg. ☐

d) Proteinuria of more than 300mg (0.3g/)in 24 hours ☐

(e) Others ☐ specify ----------

f) Don't know ☐

13: Pre-eclampsia is classified as :(*TICK ALL THAT APPLY)*

a) Mild preeclampsia ☐ b) Severe pre-eclampsia ☐

c) Eclampsia ☐ d)Others ☐ specify ---------- e)Don't know ☐

14:Severe preeclampsia is when the pregnant woman is having **{ *TICK ALL THATAPPLY)***

a) A systolic pressure that is above 160mmhg or diastolic pressure of 110mmhg or higher on two occasions at least 4 hours apart. ☐

b) A new onset cerebral or visual disturbance ☐

c) Epigastric pain ☐

d)Nausea/vomiting, ☐

e) Others ☐ specify ----------

f) Don't know ☐

15: The characteristics of Eclamptic fit includes : (***TICK ALL THAT APPLY****)*

a) Convulsions which occur regardless of the severity of hypertension ☐

b)Seizures which occur in rapid sequences as in status epilepticus and may end in death ☐

c) Convulsion may be followed by coma that lasts minutes or hours depending on the frequency of the seizures ☐

c)Others ☐ specify ----------

d) Don't know ☐

16: According to the MOH guideline which is the first line drug of choice in controlling preeclampsia hypertension.***(TICK ALL THAT APPLY)***

a)Hydralazine (Apresoline) ☐ b) Labetalol ☐ c) Nifedipine ☐

d)Aldoment ☐ e)Don't know ☐

17:Is the above first line drug available in your facility?

a) Readily available in the unit ☐

b) Not available ☐

c) Patient buys ☐

d) Don't know ☐

18: According to the Ministry of health guidelines the first line drug recommended to control convulsion in eclampsia is ***(TICK ALL THAT APPLY)***

a) magnesium sulphate ☐

b) Diazepam ☐

c)Phenytoin ☐

d)phenobaritone ☐

f)Others ☐ Specify----------

h) Don't know ☐

19:What are the signs of Magnesium sulphate toxicity ? (***TICK ALL THAT APPLY***)

a) Respiratory rate falls below 16 per minute ☐

b) Urinary output falls below 30ml per hour over the preceding 4 hours ☐

c) Others ☐ specify ----------

d) Don't know ☐

20: What is the antidote for magnesium sulphate toxicity(*TICK ALL THAT APPLY*)

a) Calcium gluconate 1 g (10mls of 10% solution) IV slowly . ☐

b) Diazepam 20mg IV bolus ☐

c) Intravenous fluids of Ringers lactate or Normal saline in 4 hours ☐

d) Others ☐ specify…….

e) e) Do not know ☐

21: Is Magnesium sulphate readily available in this unit? (TICKTHAT APPLY)

a) Readily available in the unit ☐

b) Patients buys ☐

c) Not available ☐

d) Don't know ☐

22:What is the management of severe pre-eclampsia and Eclampsia (with Blood Pressure of diastolic 110 mmhg and above)**(*TICK ALL THAT APPLY*)**

a) Admin patient ☐

b) Nurse in a quiet semi-dark room ☐

c) Monitor vital signs every 15 -30minutes ☐

d) Give magnesium sulphate as per regime to control/ prevent fits ☐

e) Consider timing and mode of delivery ☐

c) Fix an indwelling catheter to closely monitor urine output ☐

f) maintain an input and out chart ☐

g) Do blood chemistry (liver enzymes and creatine) ☐

h) Start antihypertensive as per MOH guideline to control blood pressure

i) Others ☐ Sepecify…….

j) Don't know ☐

23:What is the management of a patient with eclampsia during the postnatal care***(TICK ALL THAT APPLY*)**

a) Continue anticonvulsive therapy for 24 hours after delivery or last convulsion, when ever occurs last. ☐

b) Continue antihypertensive therapy if the diastolic pressure is 110 mmHg or more. ☐

c) Continue to monitor urine output. ☐

d) Watch carefully for the development of pulmonary edema ☐

e) Others ☐ specify .....

Which of the following statements most accurately describes your experience in using the MOH guidelines for prevention and management of PE/E? .Please indicate to the extent to which you agree or disagree with the following statements. If unsure please choose what you think is the most appropriate answer .Please answer each question by ticking where appropriate.

Question	Strongly agree	Disagree	Neither agree/nor disagree	disagree	Agree strongly
24:The guideline allows us to practice skills which we would have not practiced before its implementation					
25:The guideline have improved my knowledge on management of patients with preeclampsia and eclampsia					
26: The work load has increased thus resulting in poor patient care:					
27: I am satisfied that the guideline have reduced work load for patients with PE/E					
28:The guidelines are very complex, long not easy to follow:					
29:The guideline is written in simple terms , is clear and easy to follow					
30:I would highly recommend the utilization of this guideline to other skilled health care providers					

CHECK LIST TO ASESSES THE HEALTH FACILITY RELATED FACTORS ON THE UTILIZTION OF PE/E GUIDELINE.

CHECK LIST TO BE FILLED THE INVESTIGATOR OR A RESEARCH ASSISTANT

001: Serial Number .....002: Facility name ----------

003: Date of data extraction ----------005: The number of nurses at the

a)MCH ---- b) MATERNITY

6	Are the Guidelines/ Check list for prevention and Management PE/E available in the facility	Yes	NO
7	If yes please indicate the year of publication----------		
8	Are the the guideline /checklist displayed at the facility?		
9	Are Blood Pressure Machine available at the facility Are they in good working condition?		
10	Are the Dipsticks for testing proteinuria available in facility?		
11	Is the Magnesium Sulphate available in the facility?		
12	Is the guideline for magnesium sulphate administration available in the facility		
13	Is Calcium Gluconate available in the facility?		
14	Are the Anti-hypertensive drugs available at the facility ?If Yes Indicate the type		
15	Is the eclampsia box /set available at the facility?		

THE ASSESMENT OF RECORDS OF PATIENTS WITH SEVERE PE/ AND ECLAMPSIA ON THE OF LEVEL UTILIZATION OF PE/E GUIDELINDE

Date of retrieval ---------- in patient no ----------

PARAMETER ASSESED	YES	NO
1) nurse in a quiet semi dark room		
2) monitor blood pressure every 15 to 30mins		
3) start Mgso4 regime		
4) Respiration rate monitored every 2 hours for 24 hours post Mgso4 adminstration		
5) Urine out put monitored and recorded		
6)fluid intake monitored		
7) patellar reflexes checked		
8) Antihypertensive drugs given as per prescription		
9)Convulsion monitored		
10) Fetal heart rate monitored		
11) prepare for delivery /cs		

Appendix III: ERC Letter

Mount Kenya University

REF: **MKU/ERC/1875**
TO: **SELESTINE OWOKO ODANGA**

Date: 18 August 2021

REG: **MSCN/2015/24281**

Dear Sir/Madam,

RE: UTILIZATION OF GUIDELINE IN MANAGEMENT OF PREECLAMPSIA / ECLAMPSIA AT PUBLIC HEALTH FACILITIES MIGORI COUNTY

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **948.** The approval period is **18/08/2021 - 17/08/2022.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Peter G. Kirira
Chairman, Mount Kenya University IERC

Appendix IV: Introduction Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **188456**

Date of Issue: **20/November/2021**

RESEARCH LICENSE

This is to Certify that Ms.. SELESTINE OWOKO ODANGA of Mount Kenya University, has been licensed to conduct research in Migori on the topic: UTILIZATION OF GUIDELINE IN MANAGEMENT OF PREECLAMPSIA / ECLAMPSIA AT PUBLIC HEALTH FACILITIES MIGORI COUNTY for the period ending : 20/November/2022.

License No: **NACOSTI/P/21/14427**

188456

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix VI: Approval from the County

REPUBLIC OF KENYA

COUNTY GOVERNMENT OF MIGORI
DEPARTMENT OF HEALTH

Telegrams: "MOH", Migori
Telephone: Suna (059) 20058
Email:migoricountyHMT@gmail.com

COUNTY DIRECTOR OF MEDICAL SERVICES
MIGORI COUNTY
P O BOX 202-40400
SUNA - MIGORI

When replying please quote
MIG/CDH/TR/VOL II/93

Date: 1st Dec, 2021

MOHs- Kehancha, Awendo, Rongo SCH
Medical Superintendent, MCRH

Dear Sir,

RE: RESEARCH AUTHORIZATION; SELESTINE ODANGA OWOKO

The above subject matter refers.

This is to inform you the above named has been authorized to carry out research on **"Utilization of guidance in Management of preeclampsia in Kehancha SCH, Awendo SCH, Rongo SCH, Ntimaru SCH, Kegonge SCH, Isbania SCH and Migori County Referral Hospital"** at, Migori County.

Any assistance accorded to her will be highly appreciated.

OFFICE OF THE COUNTY DIRECTOR
01 DEC 2021
P. O. Box 202-40400 SUNA-MIGORI
HEALTH SERVICES, MIGORI

Dr. Dan Ochiel
County Director of Medical Services
MIGORI COUNTY

Appendix VII: Map of the study area in green colour

Appendix VIII: Similarity Index

SELESTINE OWOKO ODANGA

FACTORS INFLUENCING UTILIZATION OF MINISTRY OF HEALTH GUIDELINES ON MANAGEMENT OF PREECLAMPSIA ...

PROJECT

MASTERS

Mount Kenya University

Document Details

Submission ID

trn:oid:::1:3069051745

Submission Date

Nov 6, 2024, 11:26 AM GMT+3

Download Date

Nov 6, 2024, 11:47 AM GMT+3

File Name

CORRECTED_THESIS_FOR_SELESTINE_FOR_POSTGRAUATE_4th_NOV_2024.docx

File Size

3.9 MB

111 Pages

23,289 Words

129,458 Characters

turnitin Page 1 of 128 - Cover Page Submission ID trn:oid:::1:3069051745

18% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Exclusions

▸ 1 Excluded Source

Match Groups

- 222 Not Cited or Quoted 12%
  Matches with neither in-text citation nor quotation marks
- 39 Missing Quotations 2%
  Matches that are still very similar to source material
- 161 Missing Citation 9%
  Matches that have quotation marks, but no in-text citation
- 26 Cited and Quoted 1%
  Matches with in-text citation present, but no quotation marks

Top Sources

21% Internet sources
10% Publications
11% Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

No suspicious text manipulations found.

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.