KNOWLEDGE AND SKILLS ON MANAGING ECLAMPSIA AMONG NURSE-MIDWIVES WORKING AT MNAZI MMOJA HOSPITAL, UNGUJA ZANZIBAR.

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By

Rahma Jaruf Jaffar

A dissertation submitted in partial fulfillment of the requirement for the Degree of Master of Science in Nursing (Critical Care and Trauma) of Muhimbili University of Health and Allied Sciences

Muhimbili University of Health and Allied Sciences
September, 2013

CERTIFICATION

The undersigned certify they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled ***Knowledge and skills on managing eclampsia among nurse-midwives working at Mnazi Mmoja Hospital, Zanzibar*** in **(**Partial) fulfillment of the requirements for the degree of Master of Nursing (Critical care and Trauma) of Muhimbili University of Health and Allied Sciences.

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DECLARATION

AND

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I, **Rahma Jaruf Jaffar**, declare that this **dissertation** is my own original work and that It has not been presented and will not be presented to any other university for similar or any other degree award.

Signature ……..…… Date ……...

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Dedication

This work is dedicated to all nurse-midwives working at Mnazi Mmoja Hospital, Zanzibar

ABSTRACT

Background: Eclampsia accounts for over 50,000 maternal deaths a year worldwide and it is associated with very high fatality rate. It is for this reason knowledge of managing eclampsia among health workers is essential in reducing maternal morbidity and mortality. Nurse–midwives can play a major role in prevention of maternal death related to eclampsia. It is therefore important to assess Nurse-midwives knowledge in managing eclampsia.

Aim of the study: The aim of the study was to assess the knowledge and Skills regarding management of Eclampsia among nurses and midwives working at Mnazi Mmoja Hospital, Zanzibar.

Materials and Methods: A quantitative research methodology using descriptive cross section and observation study was used. Nurses-midwives knowledge and skills in management of eclampsia were tested by using self-administered questionnaires and observation checklist adopted from Jhpiego, 2011. The study recruited 129 Nurse-midwives who work at Mnazi Mmoja Hospital, Zanzibar. Data collection period was two weeks, commencing from 15th June to 30th June, 2013. Data was collected from the field through data coded and entered into SPSS version 20 for descriptive and inferential statistics.

Result: All result presented in percentages in this study were rounded off. The findings of this study revealed that, less than half of study participants (43%) had good knowledge and about 60% had poor skills in managing eclampsia. Few participants (27%) had knowledge on guidelines used in managing eclampsia. The statistical evidence shows that there is relationship between knowledge and total year of experiences ($p= 0.040 < 0.05$) but no significant difference was found between knowledge level of staff nurse-midwives and selected variables like age ($p= 0.3 > 0.05$) and professional qualifications ($p=0.51> 0.05$). Drugs shortage (58%) and equipment shortage (50%) were among barriers faced by Nurse-

midwives in managing eclampsia. Enough drugs and supplies (58%) and training/seminars (40%) were suggested as the way of enhancing management of women with eclampsia.

Conclusion

A study revealed that nurse-midwives had knowledge and practice gaps in areas of managing eclampsia. Provider's practices were not at appropriate level or in line with guidelines. Few Nurse-midwives reported to have attended in-service training on managing eclampsia. Resuscitation equipment and essential drugs for managing eclampsia are not enough and not regularily available.

Recommendation

The Hospital administration should ensure there is regular availability of essential drugs and other supplies used in managing eclampsia. Hospital management should formulate operational team of assessment and should ensure the adherence to the use of checklist and guidelines in managing women with eclampsia. On job training, seminars, continuing education and mentorship programmes were recommended for enhancing the knowledge of nurse-midwives in managing eclampsia.

Key words: Eclampsia, Knowledge, skills, Nurse-midwives, Zanzibar.

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LIST OF ABBREVIATION

B.P	-	Blood Pressure
DANIDA	-	Danish International Developmental Agency
I.V	-	Intravenous
JHPIEGO	-	Johns Hopkins Program for International Education in Gynecology and Obstetrics
MmHg	-	Millimeter of mercury
MMH	-	Mnazi Mmoja Hospital
MUHAS	-	Muhimbili University of Health and Allied Sciences.
NEDARC	-	National EMS Data Analysis Resource Centre
NHS	-	National Health Services
NOMA	-	Norad's programme for masters studies
N/S	-	Normal Saline.
P/E	-	Preeclampsia/Eclampsia
PHCU	-	Primary health care units
R/L	-	Ringer Lactate
U.S.A	-	United States of American
USAID	-	United States Agency for International development
WHO	-	World Health Organization
ZHMS	-	Zanzibar Health Management System

DEFINITION OF TERMS

Abortion is a term used when pregnancy is ended so that it does not result in birth of the child, it usually occurs from one month after conception to six months.

Eclampsia is a life threatening condition in which a pregnant woman, woman in labour or within 42 days after delivery, experiences seizures or convulsions.

Knowledge is the fact or condition of knowing something with familiarity gained through experiences or association.

Maternal death is defined as the death of women while pregnant or within 42 days after termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related or aggravated by pregnancy or its management but not from accidental or incidental cause (WHO, 2007).

Nurse-midwives are licensed health care practitioners educated in two disciplines of nursing and midwifery**.**

Preeclampsia is a disorder that can occur during pregnancy and is characterized by high blood pressure (hypertension), and protein in the urine.

Standard of care is a formal diagnostic and treatment process a doctor/nurse will follow for a patient with a certain set of symptoms or a specific illness.

CHAPTER ONE

INTRODUCTION

BACKGROUND OF THE STUDY

Eclampsia is the occurrence of convulsions in association with signs and symptoms of pre-eclampsia. The syndrome of pre-eclampsia can affect all maternal organ systems, but it is usually detected by the presence of new hypertension, proteinuria, and edema in pregnancy (Douglas & Redman, 1994). Eclampsia proceeds to be a major problem, particularly in developing countries such as Tanzania, adding significantly to high maternal mortality and mobility (Ndaboine, Kihunrwa, Rumanyika & Massinde, 2012). The number of deliveries with a complication of eclampsia at Mnazi Mmoja Hospital, the main referral hospital in Zanzibar in 2011 was 149 out of 10,367 deliveries (1.4%). However, there were 15 deaths in the same hospital with the cause of death reported as eclampsia. This corresponds to the case fatality rate of 10%. In this maternity unit there are a total of 40 Nurse-midwives, all who have had a basic training in management of eclampsia at different colleges (Mnazi Mmoja Hospital, 2011).

Risk factors for eclampsia are: family history of eclampsia or previous history of pre-eclampsia and eclampsia, teenage pregnancy, patient older than 35 years, multi-fetal gestation, primigravida and poor outcome of previous pregnancies including intrauterine growth retardation, abruption in placenta and fetal death (Hadad et al., 2000; Mattar & Sibai, 2000). The earliest symptoms of eclampsia are hypertension, protein in the urine and edema. When symptoms advance, headache, blurred vision and bloating develop. Primary symptoms of eclampsia are seizures or convulsions in a pregnant woman, woman in labour or within 42 days after delivery who does not have a history of epilepsy. Other symptoms of eclampsia include muscle aches and pain, agitation, loss of consciousness and stroke, coma and death can occur to a mother and fetus (Douglas & Redman, 1994; Ginzburg & Wolff, 2009).

Treatment of eclampsia follows well-defined guidelines aiming at preventing low oxygen to mothers, controlling maternal blood pressure, preventing ongoing seizures and preparing to deliver the baby by the safest method possible (Drost et al., 2010; Sibai, 2013). Supportive care for eclampsia include close monitoring, air way support, adequate oxygenation, anti convulsant therapy and blood pressure control (Sibai, 2005). Placing the patient in left lateral position to decrease the risk of aspiration and helps to improve uterine blood flow by relieving obstruction of venacava by gravid uterus, protecting the patient against injury during the seizures, using a padded tongue blade between the teeth and suctioning the oral secretions as needed (Nahar et al., 2013;Thompson, Neal & Clark, 2004). Nurse-midwives are in the best position to put the above strategies into practice as they are at the patient's bedside for 24 hours a day and therefore they play an important role in the prevention of maternal death related to eclampsia. Nurse-Midwives are assessed during their training for their knowledge and skills in management of eclampsia as described above.

Each year 50 Nurse-midwives were trained at the College of Health Science in Zanzibar until 2011. The course is a three year basic nursing course with a full 12 months training in a fourth year in midwifery. The management of eclampsia is included in the curriculum. The total workforce of Nurse-midwives in Zanzibar is 455 of which 300 are posted at Mnazi Mmoja Hospital. Of these 300 Nurse-midwives 40 are based in positions where they come in contact with pre-eclampsia and eclamptic patients (Ministry of health, 2013).

In addition to the training for Nurse-midwives conducted at the College of Health Sciences, short courses are provided on an ad hoc basis. Advanced life saving in obstetrics and basic emergency management of obstetric and newborn care are among recently introduced short courses for practicing midwives.

Problem statement

Eclampsia affects 5-10% of all pregnancies and contributes to 10-15% of maternal deaths worldwide. Estimated case fatality rate due to eclampsia is 14 times higher in developing

countries compared to developed countries (Duley, 2012). The case fatality rate due to eclampsia at Mnazi Mmoja Hospital is 10%. Knowledge of health care workers in managing eclampsia is essential in reducing maternal morbidity and mortality.

There are 300 Nurse-midwives at Mnazi Mmoja Hospital currently practicing; only 48 are posted in the maternity and gynecological wards. While all the nurse-midwives have been fully trained, their retention of knowledge and development of skills to effectively manage women with eclampsia is currently unknown. Furthermore there is no documented study conducted at Mnazi Mmoja Hospital, Zanzibar to assess the Nurse-midwives knowledge and skills in managing eclampsia nor the ability of nurses to use the knowledge and skills they do have.

Rationale of the study

The study is expected to determine the current level of knowledge and skills for the management of eclampsia among nurse-midwives working at Mnazi Mmoja Hospital, Zanzibar. The findings of the study will provide direction to the future training plans for nurse-midwives at the hospital in the management of eclampsia. The identification of barriers to applying existing knowledge in the workplace will provide a basis on which to allocate resources within the hospital setting. Recommendations that will be made are going to be beneficial to the public on minimizing morbidity and mortality from eclampsia.

Research questions

Do Nurse-midwives, based at Mnazi Mmoja Hospital, have adequate knowledge in managing eclampsia?

Are nurse-midwives based at Mnazi Mmoja Hospital able to perform the skills set out in the Emergency Obstetric Care Job Aid (Ministry of health 2011)?

Do additional short training sessions improve knowledge of nurse-midwives at Mnazi Mmoja Hospital?

What are the factors associated with Nurse-midwives knowledge in managing eclampsia at Mnazi Mmoja Hospital?

What are the barriers faced by Nurse-midwives at Mnazi Mmoja Hospital?

Broad objective of the study

To assess the current knowledge and skills in the management of eclampsia among nurse-midwives working at Mnazi Mmoja Hospital, Zanzibar.

Specific objectives

- To determine the current level of knowledge of nurse-midwives in the management of eclampsia at Mnazi Mmoja Hospital.
- To determine the current level of skills of Nurse-midwives in the management of eclampsia.
- To determine factors associated with knowledge in the management of eclampsia
- To determine barriers faced by Midwives in the management of women with eclampsia.

Variables to be used

Dependent variable: Knowledge in managing eclampsia and skills in managing eclampsia

Independent variable: Age, level of education and work experiences.

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CHAPTER TWO

LITERATURE REVIEW

Literature review of published and electronic sources was conducted. Initially literature review on the epidemiology of eclampsia was conducted to provide context to the literature on training materials. Thereafter, literature related to training of nurse-midwives in management of eclampsia was reviewed. The primary concepts in this literature include different training course/methodologies, nurse's knowledge and skills in managing eclampsia and barriers in managing eclampsia.

Epidemiology of eclampsia

Eclampsia is new onset of grand mal seizures activity and/or unexplained coma during pregnancy or post partum in a woman with signs and symptoms of pre eclampsia (Sibai, 2005). Akinola, Fabamwo, Gbadegesin, Ottun, and Kusemiju (2013) claim that "Eclampsia is one of the leading causes of maternal and perinatal mortality as well as morbidity throughout the world." According to Ikechebelu and Okoli (2002), Eclampsia contributed 21.1% of all maternal death at Nnamadi Azikiwe University teaching hospital during 1996 to December 2000.

Duley (2009) reported that 10% to 15% direct maternal deaths are associated with pre-eclampsia and eclampsia. The author goes on to explain that 'where maternal mortality is high, most deaths are attributable to eclampsia, rather than pre-eclampsia". The deaths are related to the supplies and equipment available,

An eclamptic seizure occurs in two to three percent of severely pre-eclamptic women not receiving anti-seizure prophylaxis (Sibai, 2004). The incidence of eclampsia has been relatively stable at 1.6 to 10 cases per 10,000 deliveries in developed countries. In developing countries, however, the incidence varies widely: from 6 to 157 cases per 10,000 deliveries (Eke, Ezabialu and Okafor, 2011). Many studies shows that pre-eclampsia and eclampsia

disproportionately affect pregnant women in Developing Countries: a woman in a Developing Country is seven times more likely to develop pre –eclampsia, three times more likely for it to progress to eclampsia, and 14 times more likely to die of eclampsia than a pregnant woman in a Developed Country (USAID, 2013).

In sub Saharan Africa, Adenkale and Akinbile (2012) found that mortality due to eclampsia was 9.9% of total maternal deaths and case fatality rate was 8.3%. In Tanzania Ndaboine et al. (2012) reported that 76 patients out of a total 5562 deliveries presented with eclampsia. In the same study there were six maternal deaths, two before delivery and four after delivery, accounting for a case fatality rate due to eclampsia of 7.89%.

In Dar es- salaam, Urassa, Carlstedt, Nystrom, Massawe and Lindmark (2006) reported that incidences of eclampsia in Muhimbili National Hospital and at population were 200/10,000 and 67/10,000, respectively. The case-fatality rate for eclampsia was 5.0% for women who delivered at MNH and 16% for those referred to MNH after being delivered elsewhere.

Training course/ methodology used in managing eclampsia

The Revolutionary Government of Zanzibar in collaboration with Ministry of Health and Social welfare, Zanzibar (2008) developed a Job Aid in Emergency Obstetric Care. The guide provides detailed step by step instructions on how to manage eclampsia. The guide starts with maintaining the airway and controlling convulsions in serious cases. Drug management for emergency control with a preference for Magnesium sulphate and maintenance of blood pressure at appropriate level using Hydralazine were recommended. Patient management, including fluid balance and laboratory investigation until safe delivery is described in the guide (Ministry of Health Zanzibar, 2008).

The Ministry of Health Zanzibar in collaboration with Johns Hopkins Programme for International Education for Gynecology and Obstetric (2011) developed another Job Aid (checklist) and conducted in-service training for managing basic emergence obstetric and new

born care where many Nurse-midwives were educated to manage emergence obstetric care including eclampsia using this checklist.

Control of seizures in Eclampsia

WHO (2011) recommended Magnesium sulfate is for treatment of women with eclampsia in preference with other anticonvulsants. The full intravenous or intramuscular magnesium sulfate regimen is recommended for the prevention and treatment of eclampsia. Studies have shown that the drug significantly lowers the possibility of seizures in women with severe pre-eclampsia or eclampsia, prevents progression from severe pre-eclampsia to eclampsia and generally lowers maternal mortality (Okereke et al., 2012; WHO, 2011).

Kim et al. (2013) reported that Magnesium sulphate is the drug of choice for preventing convulsions in pre-eclamptic women and for preventing recurrence of convulsion. Multi-centre trials have demonstrated that this anticonvulsant does not require special storage, is significantly more effective than diazepam or other drugs in reducing convulsions, preventing progression from severe pre-eclampsia to eclampsia, and improving outcomes for mothers and newborns (Duley & Henderson-Smart 2003; Kim et al., 2013).

Ekele (2009) indicated that "There are two standard protocols for using magnesium sulfate as anticonvulsant in pre-eclampsia or eclampsia". In both regimens, initiation is by the intravenous route, the difference is the route for the maintenance doses. With the Zuspan regimen, an initial intravenous bolus dose of 4 g is given slowly over a period of 5-10 min and maintenance is with 1-2 g hourly by intravenous infusion for 24 hours using infusion pump (Ekele, 2009; Zuspan, 1978).

Another protocol came from Pritchard regimen**,** which is also initiated by giving 4 g bolus magnesium sulfate intravenously over 5-10 minutes and simultaneously administering 10 g intramuscularly (5 g each buttock). This is then followed by 5 g intramuscularly at 4-hour intervals into alternate buttocks for 24 hours (Ekele, 2009; Pritchard, 1984).

In line with the Job Aid used at the Mnazi Mmoja Hospital, Noor, Halimi, Faiz, Gull, and Akbar (2001) suggested that Magnesium sulphate is the drug of choice in treatment of eclampsia and the initial loading dose of magnesium sulphate is effective in prevention and treatment of eclampsia

The patient should be monitored carefully for clinical signs of magnesium toxicity, particularly loss of patellar reflexes, drowsiness, flushing, slurring of speech, muscle weakness and respiratory depression. Level of consciousness, respiratory rate and effort and the presence of patellar reflexes should be frequently and regularly recorded during the infusion. If toxicity is suspected, the infusion should be discontinued and if required, calcium gluconate (10 ml of 10% solution) should be given (Munro, 2000).

Control of Hypertension in Eclampsia

Women with eclampsia require good blood pressure control to avoid future seizures, and to prevent stroke. Elevated blood pressure makes seizures both more likely and more difficult to control. Some studies estimated that 20% of eclampsia related deaths are a direct result of stroke which is caused by increased blood pressure. Several options are available for treating high blood pressure in eclampsia; Hydralazine and labetalol are the preferred drugs. Calcium channel blockers should be avoided because they can interact with Magnesium Sulfate and cause low blood pressure (Weber, 2007).

In 2008, Folic, Varjacic, Jakovljevic, and Jankovic concluded that control of severe hypertension, intravenous labetalol or oral nifedipine is as effective as intravenous hydralazine, with less adverse effects. The authors recommended that randomized controlled studies are required to determine whether antihypertensive therapy in mild-to-moderate hypertension in pregnancy has greater benefits than risks for both mother and fetus.

Nurses Knowledge in Management of Eclampsia

Smith, Currie, Perri, Bluestone and Canon (2012) found that the current global principles for management of pre-eclampsia and eclampsia are included in pre service and in services training in Zanzibar. However, they found out that there is lack of knowledge and skills in the use of Magnesium Sulphate in some health facilities. Furthermore although pre-eclampsia and eclampsia management is part of pre-service and in- service training, most health providers sampled were unable to detail the features of pre-eclampsia and eclampsia (PE/E) and were also reluctant to use Magnesium Sulphate as they fear the potential side effects. The study concluded that there is still a need for enhancing health workers' knowledge and skills for better utilization.

In Tanzania, a study conducted by Plotkin, Tibaijuka, Makene, Currie and Lacoste (2010) suggested that provider practice is not at an appropriate level. The same authors reported "of the 11 cases of PE/E observed, eight should have been treated with magnesium sulphate and appropriate antihypertensive; however only two received both of these medication".

Van-Lonkhuijzen, Dijkman, Roosmalen, Zeeman and Scherpbie (2010) concluded that training programmes may improve quality of care, but strong evidence is lacking. Policy makers need to include evaluation and reporting of effects in project budgets for new training programmes.

The findings of the study conducted in Tanzania on quality of care for prevention and management of maternal and newborn complications indicated that "much still need to be done to improve the quality of maternal and newborn care in Tanzania. A combination of factors inhibits the provision of quality care: Provider knowledge and skills appear to be inadequate and outdate in key areas such as managing preeclampsia and eclampsia" (USAID, 2010).

Factors associated with Nurse-midwives knowledge in managing eclampsia

In Bungalow a study conducted by Baby (2005) found that there is no significant association between knowledge level of staff nurse and selected variable like age ($x^2 = 3.2$), professional qualification ($x^2 = 0.69$) but significant association was found between knowledge level and total years of experience ($x^2 = 4.3$) and in-service education ($x^2 = 8.23$).

In Iran, a study conducted by Mirzakhan, Shoorab, Golmakani, Eafazoli and Ebrahimzadeh (2011) reported that average of the age among graduates of midwifery in this research was 24 years, majority of participants (64%) were skillfully in managing eclampsia. Level of self confidence for graduate of midwifery from university and colleges about situation and emergencies, was statistically significant difference between self confidence and those two situation ($p = 0.027 < 0.05$). The authors go on to explain that a Pearson test has shown a positive correlation between acquiring the skills during education and self confidence of the graduates for the management of the situation (T test result is $P = 0.02 < 0.05$).

Providers who completed Skilled Birth Attendant (S.B.A) in-service training performed better. Of the 250 providers who participated in various round of assessment, 70 SBA trained providers scored an average of 89% versus 61% among the 180 non SBA trained providers (USAID & Nepal Society for Obstetricians and Gynecologists, 2009).

Gaps identified in knowledge and practice

USAID and NSOG (2009) found that "80% of providers improved their knowledge of severe pre-eclampsia/Eclampsia however they found changes in practice particularly in managing pre-eclampsia/eclampsia and monitoring for toxicity". Furthermore, gaps identified in knowledge and skills were: repeating the dose of Magnesium sulphate if further fits occur after 15 minutes, management of low urine output, monitoring signs and symptoms of pulmonary edema, In the same study the most gaps found during baseline assessment were:, transfer of

trained service provider, non-availability of magnesium sulphate, reflex hammer, calcium gluconate and resuscitation kit including ambu bag.

Ghebrehiwet (2006) reported that among the quality gaps identified was poor monitoring of normal and complicated labour. Although both antihypertensive and anticonvulsive drugs were administered in almost all eclamptic patients (96.2 percent), use of drugs in pre-eclampsia mothers was low; no drug was administered in 32 percent of them. Furthermore monitoring of eclampsia patients is found to be poor, as only in one fifth (22.3 percent) of patients were blood pressure monitored hourly, and in only14 percent were fetal heart beat measured hourly.

Barriers in managing eclampsia

Engender Health (2007) reported that key barriers in management of eclampsia are lack of National Priority and Guidelines, lack of Education and Training, Supply Shortage, financial cost and weak health system. The nurse at three Indian hospitals stated that they had neither the knowledge nor the skills to manage eclampsia patients at the same time; they accepted that there was some hesitancy to manage such complicated cases (Baruaa et al., 2011). The authors go on to report that; they feared being blamed for any negative outcomes that could result, even when those outcomes were a natural consequence of the condition.

CHAPTER THREE

METHODOLOGY

Study design

The study employed a descriptive cross section study and observational study. A descriptive cross section study is a study in which the present associations between two variable or potential related factors are measured at a specific point in time in a defined population (Taylor, 1999). Nurse's knowledge in management of eclampsia was measured against selected characteristics such as age, academic qualifications and working experiences to see if there was an association. Observational study is one in which a researcher observes behavior in a systematic manner without the researcher influencing or interfering with behavior. Observation study was used to gain insight into what was really happening in the management of eclampsia in the maternity wards, in Mnazi Mmoja Hospital, Zanzibar.

Study setting

The study was conducted at Mnazi Mmoja Hospital, Zanzibar in Tanzania which is located along the coast of the Indian Ocean. This hospital was chosen because it is the main public hospital in Unguja, Zanzibar where most pregnant women deliver and it is the referral hospital for all six districts in Unguja (Zanzibar) namely: Urban District, West, Central, South, North A and North B. It serves as a teaching hospital for the College of Health Sciences. The number of admission per year in maternity ward, 2011 was 10,905; number of deliveries in 2011 was 10,367 while eclampsia patients admitted in 2011 were 149 women of which 15 died. Nurse-midwives working at Mnazi Mmoja are 300 including 40 working in maternity ward

Study population

Kazeroon (2001) defined study population, as a group of [individuals] taken from general population who share common characteristics. The target populations comprised Nurse-midwives working at Mnazi Mmoja hospital, Zanzibar. The total number of these nurse-

midwives was 300. All Nurse-midwives in Mnazi Mmoja Hospital were involved in this study because all Nurse-midwives can be reallocated to the maternity wards when necessary.

Sample size

As a rule, sample size calculation is necessary to reflect the actual number obtained from the study population. The estimated sample size was 117 Nurse-midwives and was calculated by using open source software for epidemiological statistics, open epi version 2. The formula used in sample size $n = N\ p\ (1-P)\ /d^2\ /\ z^2\ 1-\alpha/2\ (N-1)\ +P*(1-P)$. Parameters used are:

N= population size = 300

p= proportion of health care workers with knowledge on management of eclampsia in Zanzibar = 42% (Plotkin et al, 2012).

d= confidence limits as % of 100 (absolute+/- %) = 7%

Z = Standard normal deviation of 1.96 corresponding to 95% confidence interval

$\alpha = 0.05$

Sample size obtained= 117

To adjust for non responses 10% of the calculated sample size was added to the N as follows: = 117 x 0.1= 11.7 then 11.7 +117= 129.

Therefore sample size = 129 Nurse - Midwives.

Sampling Procedure

This is the method that is used to draw a sample from a study population in such a manner that the sample will give a representative picture of the study population. Probability proportional sampling used to obtain study participant where Nurse-midwives were divided into strata according to their working department: e.g., maternity, I.C.U and gynecological ward, medical wards (male and female), surgical wards (male and female), Outpatient department and outpatient clinics. Then selection of Nurse-midwives to be sampled from each stratum was done by probability proportional sampling as in table 1 in order to ensure that all Nurse-midwives in Mnazi Mmoja Hospital have the same probability of selection irrespective of the

size of their cluster. The sample fraction was used to get sample size of each unit/ward. The sample fraction obtained by dividing required sample size with total population as follows;

Required sample size = 129

Total population of Nurse-midwives= 300

Sample fraction = required sample size / Total population of Nurse-midwives = 129/300 multiplied by total number of Nurse-midwives in each ward or unit to obtain representative sample in each ward.

Table 1: PROPORTIONAL SAMPLING OF NURSE-MIDWIVES IN MNAZI MMOJA HOSPITAL

S/NO	Unit	Total number of Nurse-midwives	Number of Nurse-midwives in each ward, multiplied by sample fraction	Sample size of each ward to be included in the study
1	Maternity M Mmoja	22	22 x 0.43	10
2	Maternity Mwembeladu	18	18 x 0.43	8
3	Theatre maternity	10	10 x 0.43	5
4	Gyna ward	10	10 x 0.43	5
5	Female surgical general	12	12 x 0.43	5
6	Female medical ward	9	9 x 0.43	4
7	Male surgical 1, 2	12	12 x 0.43	5
8	Male surgical 3, 4	9	9 x 0.43	4
9	Main Theatre	12	12 X 0.43	5
10	Male medical ward	10	10 x 0.43	4
11	I C U	9	9 x 0.43	4
12	Pediatric B	12	12 x 0.43	5
13	T B ward	8	8 x 0.43	3
14	Pediatric A	18	18 x 0.43	8

15	O. P. D	10	10 x 0.43	5
16	Eye ward	9	9 x 0.43	4
17	New Mapinduzi	9	9 x 0.43	4
18	Old Mapinduzi	12	12 x 0.43	5
19	Eye clinic	6	6 x 0.43	3
20	E N T	9	4 x 0.43	4
21	Care & treatment clinic	14	14 x 0.43	6
22	Mental ward	14	14 x 0.43	6
21	Other clinics	37	37 x 0.43	16
	Total	**300**		**129**

A lottery method used to get respondent from each unit, a list of Nurse-midwives was obtained from duty roster. A unique number was assigned to each Nurse-midwife who voluntarily provided consent to participate in the study. Afterwards a research assistant closed the eyes and picked papers according to the number of Nurse-midwives required to be included in the study, then the paper was unfolded and all Nurse-midwives who possessed numbers selected were included in the study.

The exercise involved all three shifts (morning, evening and night) and was done in all units/wards until required sample size was obtained. All selected Nurse-midwives were required to fill questionnaires. Convenience sampling used to obtain participants in observational study. Only main maternity ward was involved in observational part. Observation was conducted to all Nurse-midwives allocated in managing eclamptic patient during their shift and those who gave their consent to participate in the study.

Inclusion criteria

All Nurse-midwives working at Mnazi Mmoja Hospital who volunteered to participate and provided their consent to participate in the study.

Exclusion Criteria

The study excluded all Nurse-midwives who are in holidays, training, sickness or unwilling to participate were not coerced to be engaged in the study.

Pre-testing

A pilot study was conducted before the actual data collection to pre-test the accessibility of the target population and instrument's capability i.e. to check if the instrument was able to collect relevant information as desired, to identify potential problem areas, unanticipated interpretations and cultural objections to any of the question. A sample of 10 Nurse-midwives selected randomly from two wards in Kivunge Hospital for pilot study. The site was selected because it offers similar services of obstetric care and the Nurses who worked there have the same characteristics as those in study area. On completion, the results of the pre-test were discussed with colleagues and research assistants; the pre-test revealed that some of respondents failed to answer certain questions in a given questionnaire; modifications to some parts of the questionnaire were made.

Data Collection Tool

A self-administered questionnaire was used to collect the data (see appendix I), and observational checklist (see appendix II). The questionnaire includes four parts (demographic, knowledge on managing eclampsia, information on guidelines, barriers and nurses opinion in managing eclamptic patients). A questionnaire contains both closed and open ended questions, and it has 21 questions: six questions on demographic data, 12 on knowledge in managing eclampsia and three on guideline, barriers and opinions in management of women with eclampsia. The questionnaires were developed from checklist for management of eclampsia by Jhpiego in collaboration with the ministry of health, 2011. According to copy right of 2011 of Jhpiego, the material may be freely used in educational and non commercial purposes.

Both tools were formulated in English and no translation was made into Swahili because English was the media of communication for study participant during training. Some of the

items of questions were not clear to the participants, the questionnaires were filled in the presence of researchers and research assistants, so participants were free to ask questions or clarification to any member of research team.

Research team

Research team comprises principal investigator, and two research assistants, these were midwives who hold advanced Diploma in Midwifery. The principal researcher was responsible for supervision of research group and ensuring the quality and research procedure were followed. Research assistants were trained for three days on how to familiarize, administer, present research tool and collection of research tool, clarification of data collection tool was done so as to enhance the uniformity of data collection.

Data management

The study participants were required to fill a structured questionnaire at their working station at Mnazi Mmoja Hospital, no discussion was allowed in responding to a question on the questionnaire between participants. The filled questionnaires were collected on the same day by a researcher and research assistants. This was done to determine the actual knowledge of study subjects in managing eclampsia. A satisfactory pass score in knowledge and skills in managing women with eclampsia was 85% and above (85-100%). A competent midwife had to obtain satisfactory pass scores in both knowledge and skills (MOHSW, 2010).

The observation checklist was used in observing study participant's skills in managing women with eclampsia while they are performing their daily nursing activities in the maternity ward. Nurse-midwives who participated in observation were those recruited in answering the questionnaire and worked in maternity. Before data collection participants signed a consent form they were informed earlier that if they would agree to participate in the study they will be required to fill a questionnaire and some of them will be observed whilst they are managing women with eclampsia. But during observation they were not informed for the reason of

avoiding observation bias; if persons knew that they are being observed they may act unusually or they may be nervous (Andrew, 2008).

The Nurse- Midwives in each day of observation filled the questionnaire and then observation was done to Nurse-midwives allocated in managing a woman with eclampsia. Principal researcher measured skills performance of each selected subject by using checklist for managing eclampsia developed by Jhpiego 2011. Each participant was observed for 3-4 hours. The observation was scheduled for weekdays and weekends, as well as morning, evening and night shifts. Shift rotation was determined which providers would be observed on which day and during which shift. To avoid observing each participant more than once, a roster having the names of all study participants was used to assign a unique number for each participant. Thereafter a selection of participant by simple random sampling was done.

Each correct performance was marked one and incorrect or incomplete performance was marked 0, other skills were marked not applicable (N/A) if the skills would be not be needed at that time. Total score was obtained by adding the total number of correct items on the checklist. The similar measuring instrument was applied to all participants then the level of knowledge was classified as in table 2.

TABLE 2; THE LEVELS OF SKILLS WAS CLASSIFIED AS FOLLOWS:

PERCENTAGES	**SKILLS**
85% - 100%	Higher
70% - 84%	Moderate
50% - 69%	Average
0% - 49%	Poor

All questionnaires and checklist form was peer reviewed carefully, and uncompleted questionnaire was excluded before data analysis.

Ethical consideration

The study was carried out after the approval by the Research, Ethical and Publication Committee of the Muhimbili University of Health and Allied Sciences (MUHAS), and granted a permit to conduct a study. Later the permission to conduct the study was sought from Mnazi Mmoja Hospital administrative authority.

The aim of the study was explained to the potential study participants. Consent of Nurse-midwives was sought and their right to participate or not to participate was respected. They were informed that they had the right to withdraw from the exercise if they wish to. Those who signed the informed written consent (see Appendix 2) were recruited in the study. A signed consent was preferred to verbal consent as it stands as evidence or a record that discussions have taken place and of the person's choice.

Participants were assured of the confidentiality of their name and their answers. Instead of names, code numbers were used to ensure anonymity. All data obtained during data collection was stored under strict conditions where the researcher (Msc student) only had access. All filled data collection instruments will be destroyed by burning after the dissertation is accepted for the award of the Masters Degree.

Data analysis and presentation

Data was checked for completeness and correctness then coded and entered in the computer database. Frequency distributions, pie chart and cross-tables were used to provide an overall and coherent presentation and description of data. Continuous variables were presented as means, nominal, or percentages. Data was analyzed by using computer programme running SPSS version 20, with the assistance of a data manager. Bivariate analysis was used to express the magnitude and direction of the association between education level, working experiences, and knowledge and skills in managing eclampsia. Chi square (X^2) test were used to define association knowledge in managing eclampsia and selected variable like age, education, and

years of experiences. P value of 0.05 was taken as cut off for statistical significance. All qualitative multiple response regarding training information, opinions and barriers in managing eclampsia were merged into themes and then coded before data entry to quantify its analysis.

Reliability

Reliability is maintained by ensuring consistence and accurate record of data. Observation was done only by the researcher so as to ensure consistency in scoring the observed practice and avoid bias.

Validity:

Is the ability of the tool to measure what is supposed to be measured, Standard observation guide and questionnaire which were used in this study are already validated by Jhpiego and Ministry of health of Zanzibar. Additionally, a pilot study was done at Kivunge Hospital to pretest the instrument adequacy and necessary modifications were made.

Result dissemination

The findings of this study generated important information on management of patients with eclampsia. Results were planned to be disseminated to different stakeholders such as Muhimbili School of Nursing, Muhimbili University Library, Mnazi Mmoja Hospital, and Ministry of health Zanzibar. In addition the results will also be presented to various scientific conferences and in scientific journal.

CHAPTER FOUR

4.1 SUMMARY OF RESULTS AND FINDINGS

This chapter presents the results of knowledge and skills on managing eclampsia among Nurse-midwives at Mnazi Mmoja Hospital, Zanzibar. The results are presented according to the objective of the study. All percentages of the results in this study are rounded off.

4. 1. 1 GENERAL CHARACTERISTICS OF STUDY POPULATION

One hundred and twenty Nurse-midwives were participated in this study (Response rate = 93%). The study was conducted between June 15 and June 30, 2013. Table 4.1 reflects the mean age group of study participants was 35 years. Many of study participants were those aged 31-40 as they were 75 being (58%) of all study participants. Majority of Nurse-midwives who participated in this study were those with an ordinary diploma level of education as they were 100 making (78%) of all study participants. Nurse-midwives with advanced Diploma were the lowest of all categories that were eligible for the study, as it constituted 6% of study participants.

Table 4.1 Proportion of Nurse-midwives according to their demographic Characteristics

Characteristics	**Number N = 120**	**Percentage**
Age (years)		
20 – 30	20	17
31 – 40	46	38
41- 50	36	30
51- 60	18	15
Level of education		
Secondary o level	62	52
Secondary A level	14	12
College	32	27
University	12	10

In analyzing age of respondents in table 4.1 above, majority of Nurse-midwives (38%) aged between 31-40 and more than half of respondents (52%) had secondary O-level education.

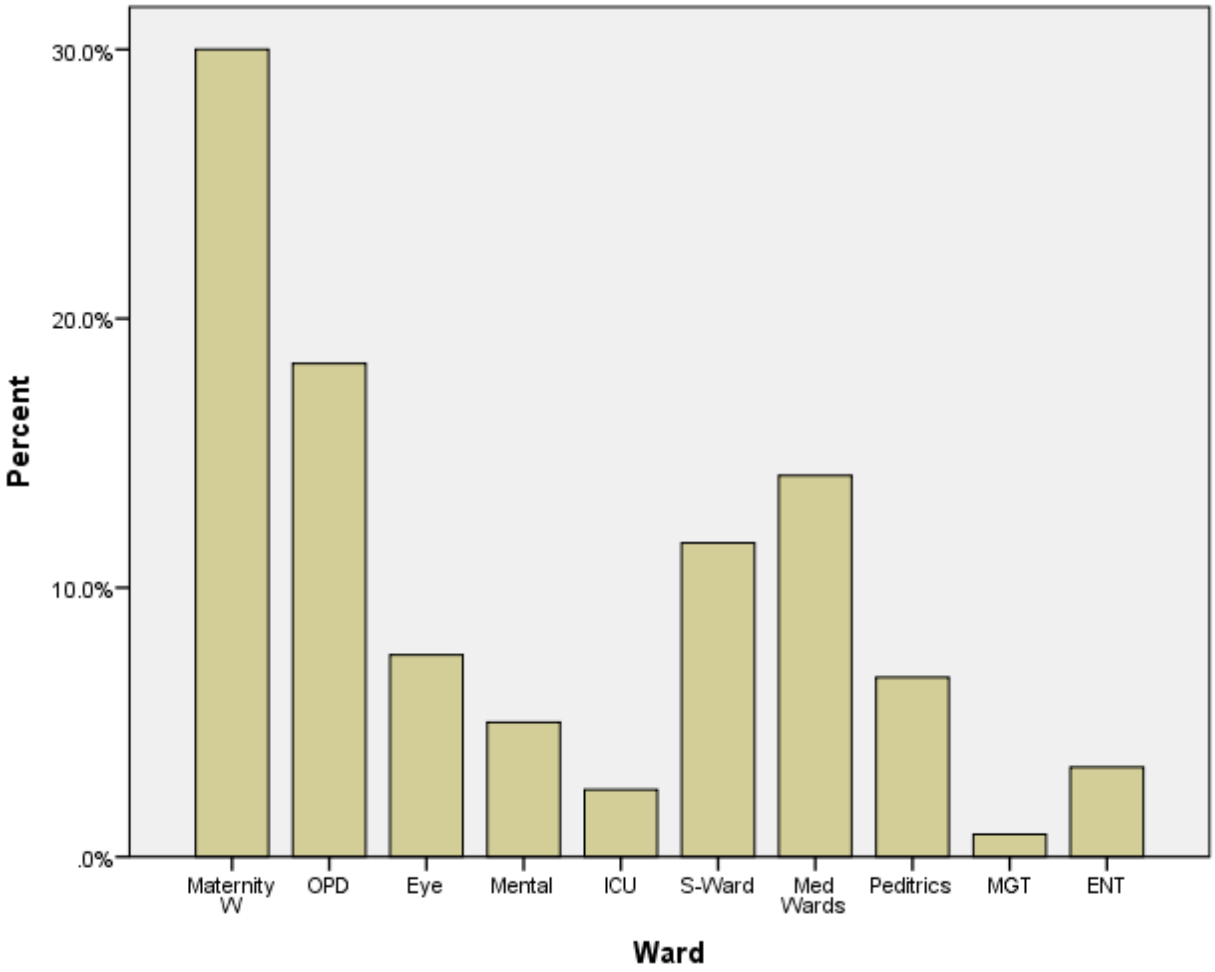


Figure 1.1: Frequency distributions of Nurse-midwives working area/ward at Mnazi Mmoja Hospital

The Figure1.1 shows that about thirty percent of study participants were those who worked in maternity as they were 36 being (30%) of all study participants.

Training information in managing eclampsia

Figure 1.2 below revealed that of the 120 participants, 108 (90%) was aware of current management of eclampsia. Table 4.2 shows majority of study participants (63%) had got their expertise in managing eclampsia at midwifery nursing schools. About 33% of participants got .their expertise in managing eclampsia at job training workshop. Eight percent of participant got their expertise in managing eclampsia by observing their colleague while performing it on a woman and only 8 (7%) had got their expertise in managing eclampsia from job aid references.

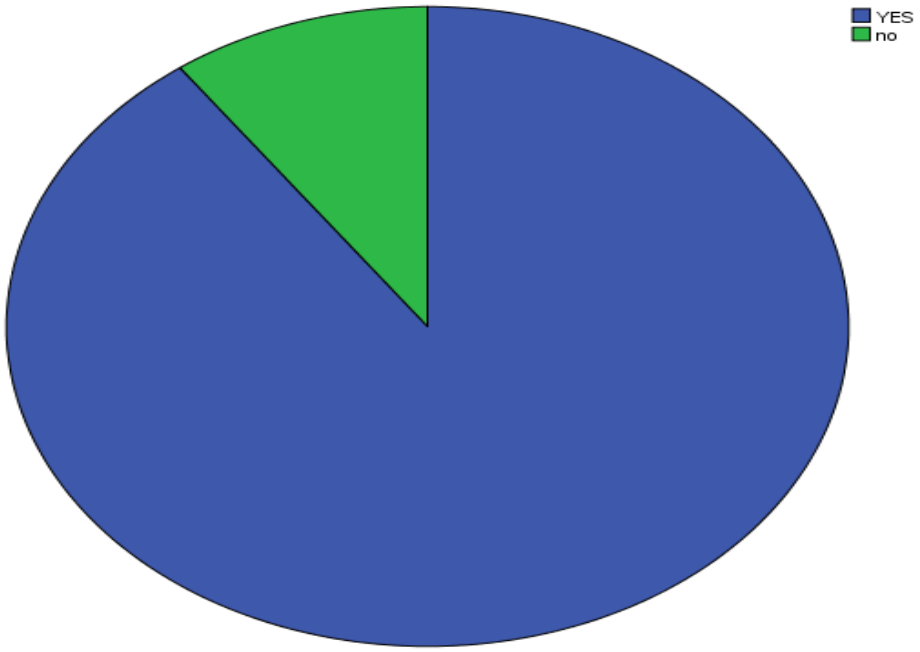


Figure 1.2: Nurse-midwives awareness about current management of eclampsia

Figure 1.2 shows that majority of participants (90%) were aware with current management of eclampsia.

Table 4.2: Participants response on training Related to knowledge and skills on managing eclampsia.

Item	**Yes (%)**	**No (%)**
Got training from Nursing/midwifery school	76 (63%)	44 (37%)
Job training workshop	40 (33%)	80 (67%)
Observing their colleagues	10 (8%)	110 (92%)
Job Aid reference	8 (7%)	112 (93%)

As shown in table 4.2; Majority of respondents (63%) got their training from Nursing/midwifery school. Only (7%) of participants got training related to knowledge and skills on managing eclampsia from job aid reference

Table 4.3: Reason of Nurse-midwives for not knowing current management of eclampsia

Reason	**Responses**	**Percent**
Didn't get any information on current management of eclampsia	7	58
Didn't attend any seminar or refresher course on current management of eclampsia	5	42
Total	**12**	**100**

Among 12 nurse-midwives who were not aware with current management of eclampsia were asked about to give reason on why they didn't know current management of eclampsia, majority reported that they didn't get any current information about management of eclampsia (58%) and 5 midwives (42%) reported they didn't attend any seminar or refresher course on current management.

Table 4.4: Year of exposure to knowledge of managing eclampsia among Nurse-midwives at Mnazi Mmoja Hospital

Year	**Frequency**	**Percent**
2013	4	3
2012	6	5
2011	21	18
2010	10	8
2009	29	24
2008 and earlier	50	42
Total	**120**	**100**

Table 4.4 shows that, about 42% of study participants got their expertise in managing eclampsia in 2008 or earlier than that.

Nurse-midwives knowledge on managing eclampsia

Subjects filled a 23 item questionnaire. This tool was used for evaluation of knowledge on managing eclampsia and had about 10 questions that were assessing their knowledge. The mainstay of the questions were focusing on immediate management during fit, care of a woman after convulsion, physical examination needed after convulsion, the recommended intra-venous line in managing eclampsia, the recommended dose of that drug selected above, the prevention of toxicity of drug selected, Immediate measure in case of toxicity of the drug

selected happen, the recommended group of drug if diastolic blood pressure remains above110 and other management of eclampsia. Possible score ranged from one to ten, which then multiplied by 100 to get percent afterwards they were grouped into four level of knowledge assessment.

LEVEL OF KNOWLEDGE AMONG NURSE-MIDWIVES WORKING AT MNAZI MMOJA HOSPITAL ZANZIBAR

The knowledge scored and their levels were as follows: Of the 120; All Nurse-midwives had no very good knowledge or satisfactory pass score (85-100) to be competent in managing eclampsia, 43% scored 70-84 leveled good, 40% scored between 50 – 69% leveled averages, 20% scored between 0 – 49% leveled poor.

Table 4.5: Knowledge among Nurses working in Mnazi Mmoja Hospital

Level	Score	Number	Percent
Very Good	85-100	0	0
Good	70 -84	52	43
Average	50 – 69	48	40
Poor	0 - 49	20	2

Table 4.5: shows that 43% of respondents had good level of knowledge. Also there was no one who scored very good (satisfactory pass score to be competent in managing eclampsia)

Table 4.6: Association between Knowledge of managing eclampsia and Professional level of Respondents

Profession	**Score**						**Total**	
	70 - 84 Good Knowledge		**50-69 Average knowledge**		**0-49 Poor knowledge**			
	n	(%)	n	%	n	%	n	%
Certificate	8	(40%)	9	(45%)	3	(15%)	20	(100%)
Diploma	35	(42%)	33	(39%)	16	(19%)	84	(100%)
Advanced Diploma	2	(50%)	2	(50%)	0	(0%)	4	(100%)
Degree	7	(70%)	3	(30%)	0	(0%)	10	(100%)
Others	0	(0%)	1	(50%)	1	(50%)	2	(100%)
TOTAL	52	43%	48	(40%)	20	(17%)	120	(100%)

(X^2 = 7.175, df = 8, p = 0.518)

Table 4.6 Shows that most of Nurse-midwives (70%) who have degree level of Profession had good knowledge (70 -84%) in managing eclampsia, however there was no significance difference (p, 0.518) between Knowledge of managing eclampsia with profession level of respondents**.**

Table 4.7: Association between Knowledge of managing eclampsia and Years of working experiences

Years	**Score**						**Total**	
	70 - 84 Good Knowledge		**50-69 Average knowledge**		**0-49 Poor knowledge**			
	n	(%)	n	%	n	%	N	%
1-5 years	20	(36%)	22	(38%)	14	(26%)	56	(100%)
6-10 years	24	(56%)	18	(42%)	1	(2%)	43	(100%)
11-20 years	6	(55%)	4	(36%)	1	(9%)	11	(100%)
21-30 years	2	(22%)	3	(33%)	4	(45%)	9	(100%)
TOTAL	52	43%	48	(40%)	20	(17%)	120	(100%)

(X^2 = 19.062, df =10, p = 0.040)

Table 4.7 revealed that Nurse-midwives with 6 – 10 years of working experiences and those with 11- 20 years of working experiences were more knowledgeable as they scored good points (56%) and (55%) respectively. Statistical evidence shows that; there was a significant association between years of working experiences and knowledge level of managing woman with eclampsia.

Table 4.8: Association between Nurse-midwives knowledge of managing eclampsia with Age of respondents

Age	**Score**						**Total**	
	70 - 84 Good Knowledge		**50-69 Average knowledge**		**0-49 Poor knowledge**			
	n	(%)	n	%	n	%	N	%
20 - 30yrs	8	(40%)	9	(45%)	3	(15%)	20	(100%)
31- 40 years	19	(41%)	22	(48%)	5	(11%)	46	(100%)
41- 50 years	15	(42%)	6	(31%)	7	(28%)	36	(100%)
51 – 60 years	10	(56%)	6	(33%)	2	(11%)	18	(100%)
TOTAL	52	43%	48	(40%)	20	(17%)	120	(100%)

X^2 = 6.53, df= 6, p = 0.366

Table 4.8 shows that more than half of respondents (56%) who aged 51-60 years scored good and there was no significant difference between age of respondents and knowledge of managing woman with eclampsia (p = 0.366).

Table 4.9: Relationship between Nurse-midwives knowledge on managing eclampsia and placement of expertise in managing eclampsia.

Placement of expertise	**Score**			**Total**
	70 -84 (Good knowledge)	**50-69 (Average knowledge)**	**O -49 (Poor knowledge)**	
At Midwifery School	31 (41%)	26 (34%)	19 (25%)	76 (100%)
At Job training workshop	19 (47)	21 (53%)	0 (0%)	40 (100%)
From Job Aid reference	2 (25%)	5 (63%)	1 (12%)	8 (100%)

Table 4.9 above shows that, about 47 % of Nurse-midwives who had good knowledge on managing women with eclampsia got their expertise from on job training workshop followed by Nurse-midwives who were trained eclampsia from Nursing/midwifery school (41%).

However the evidence shows that there was no significance association between knowledge level of staff nurse-midwives and place of expertise like observing colleague ($p = 0.951$) and Job aid reference ($p= 0.339$)), Significance association was found between Nurse-midwives knowledge level with Nursing midwifery school ($p = 0.005 < 0.05$) and job training workshop ($p=0.002< 0.05$).

Knowledge on immediate management during fit

In table 4.1.0 below, participants were required to choose a correct answer on immediate management during fits/convulsions. Correct answer was combination of efforts obtained from item b and item c. For those who choose item e in this table they were considered as knowledgeable on immediate management during fit. On the other hand those who choose item b or item c only and those who choose other items, (a) or item (d) were considered as not having correct knowledge on immediate management during fit/convulsions.

Table 4.1.0: Nurse-midwives knowledge on immediate management during fits.

Correct action immediate management mentioned	**Frequency**	**Percent**
a) Wipe the frothy saliva from the patient mouth, check for patient linen, If soiled changed and cover with clean linen.	12	10
b). Shout for help, to urgently mobilize available personnel, Turn the woman to lie on her left side to reduce the risk of aspiration of secretions, vomit and blood	16	13
c). Ensure the woman airway is open, Assess breathing, if the woman is not breathing begin resuscitation measures, give oxygen 4-6 liters per minute by mask or cannulae, evaluate pulse, If absent initiate CPR and call arrest team,	8	7
d) A and C	24	20
e). B and C	88	73

The table 4.1.0 above shows that majority of respondents (73%) had correct knowledge on immediate care during fits as they were able to mentioned both type of care (B+C) obtained from item (e)

Respondents were asked to choose among four options on what was the correct care of woman after convulsion. Table 4.1.1 reflects the result.

Table 4.1.1: Frequency distribution which shows Participants knowledge on care of women after convulsion

Correct care mentioned	**Response N=120**	**Percentage**
a) If available give oxygen 4-6 liters per minutes by mask or canula	2	2
b) Observe color for cyanosis and need for oxygen	9	7
c) Aspirate the mouth encourage the woman to lie on her side to reduce the risk of aspiration of secretions, vomit and blood, Ensure woman air way is open	16	13
d) All of the above	65	54

The result in this table shows that, more than half (54%) of respondents were able to mention all measures needed to care women after convulsion.

Respondents were tested if they could mention correctly on what kind of assessment/ physical examination needed after convulsion. Those who were knowledgeable on this question they choose a combination of activities obtained in the item (b). Table 4.1.2 reflects the result.

Table 4.1.2: Frequency distribution of knowledge on physical examination needed after convulsion

Correct examination mentioned	Frequency	Percentage
a) observe color for cyanosis and need for oxygen, check the legs and put side rails to prevent falling down of patient	15	13
b) Observe color for cyanosis and need for oxygen, Check for aspiration: lungs should always ascultated after the convulsion has ended, Check vital signs and fetal heart rate	36	30
c) check vital signs, check fetal heart rate and consult doctor for caesarian section	60	50
d) Auscultate the lungs; examine the mouth and level of consciousness	30	25

The result of this table shows that majority of study participants were not able to mention correctly the examination needed after convulsions. Only thirty percent managed to select the correct item.

When participants were asked about the recommended intravenous line for managing eclampsia, Figure 4.1.3 shows the study subjects' responses

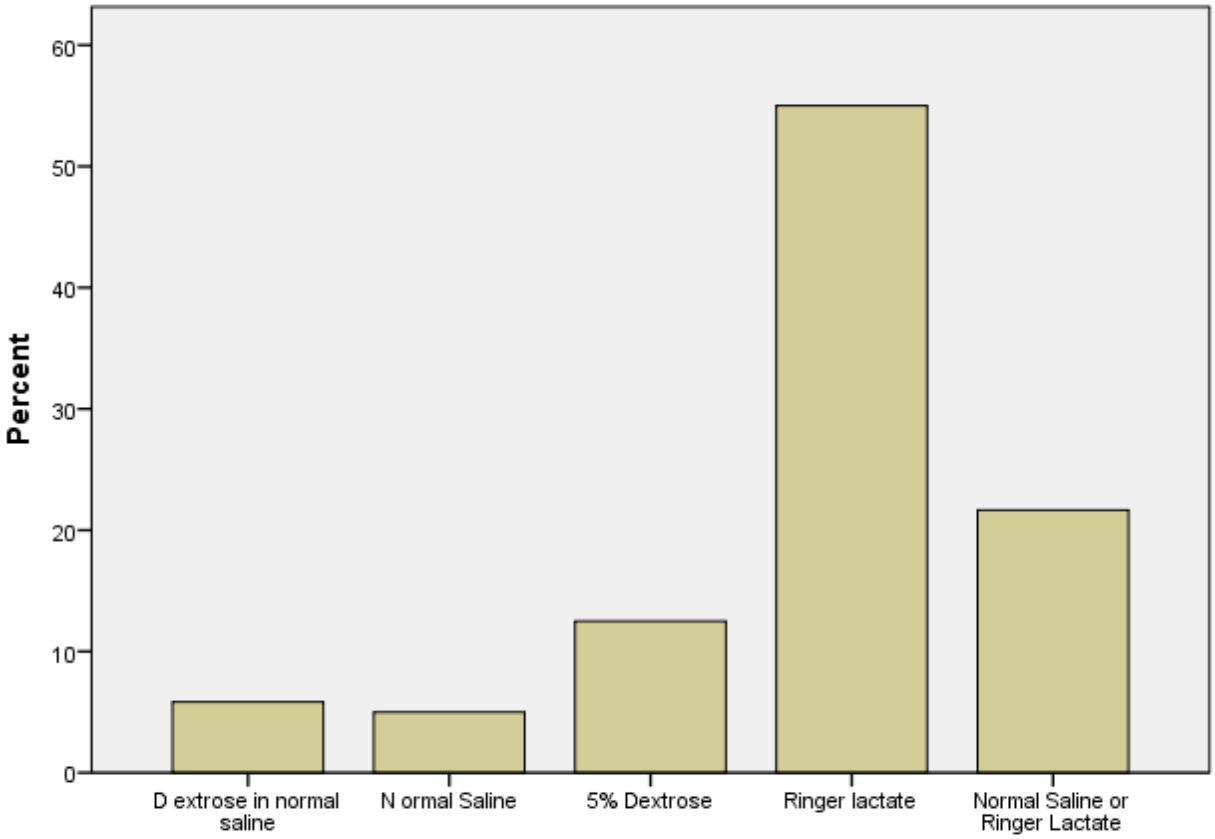


Figure 1.3: Nurse-midwives knowledge on recommended IV line in management of eclampsia

Nurse-midwives knowledge on recommended IV line in management of eclampsia

Although the result of this Figure 1.4 shows that more than half of respondents identified Ringer lactate as IV line recommended in managing eclampsia. Only 22 % of study participants mentioned that you can use Ringer lactate or Normal saline as recommended in the checklist.

Nurse-midwives Knowledge on recommended drug used to control convulsion

In order to understand whether respondents were knowledgeable on recommended drug used to control convulsion, respondent requested to choose among four drugs mentioned in Figure1.4 below:

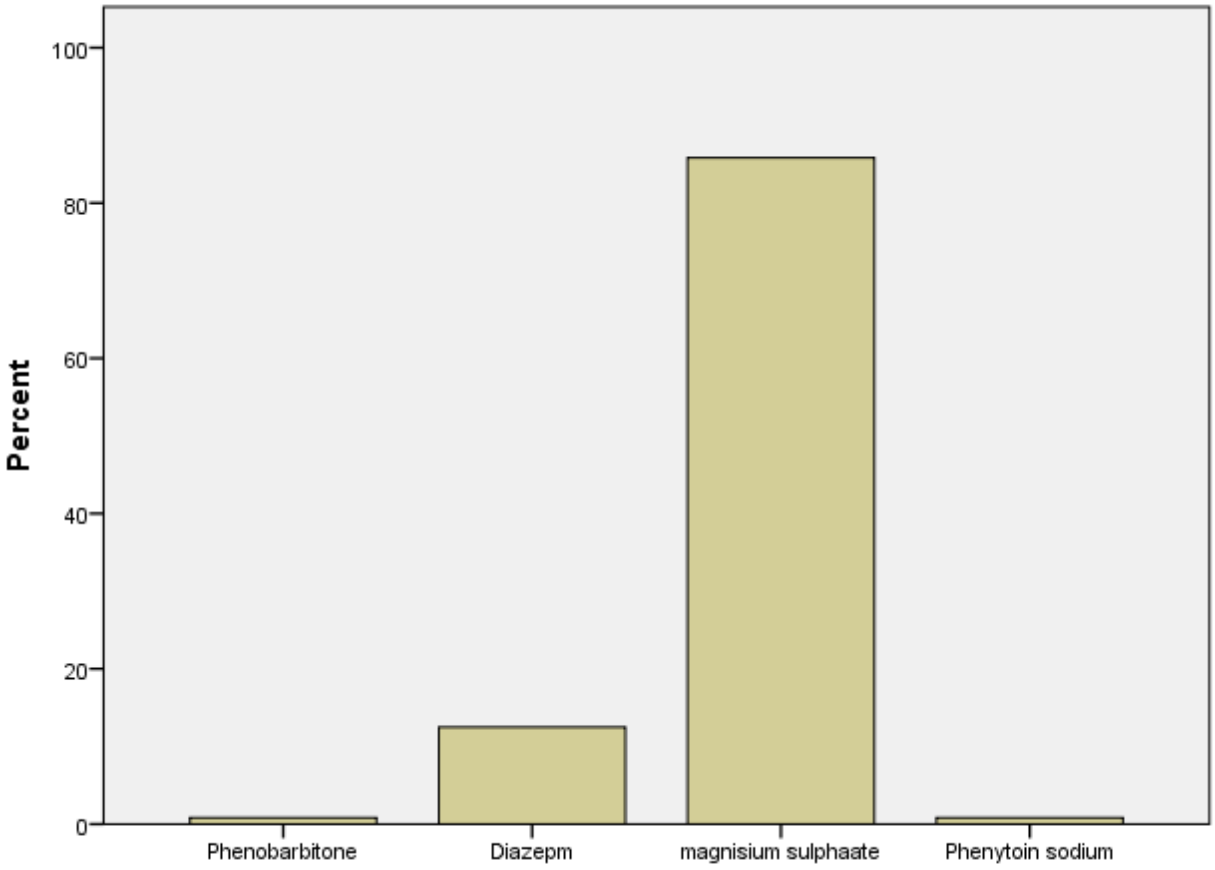


Figure 1.4: Nurse-midwives knowledge on drug used to control convulsion

Nurse-midwives knowledge on drug used to control convulsion

The above Figure 1.4 shows that, Majority of respondents (89%) of study participants were able to mention Magnesium sulphate as recommended drug used to control convulsion

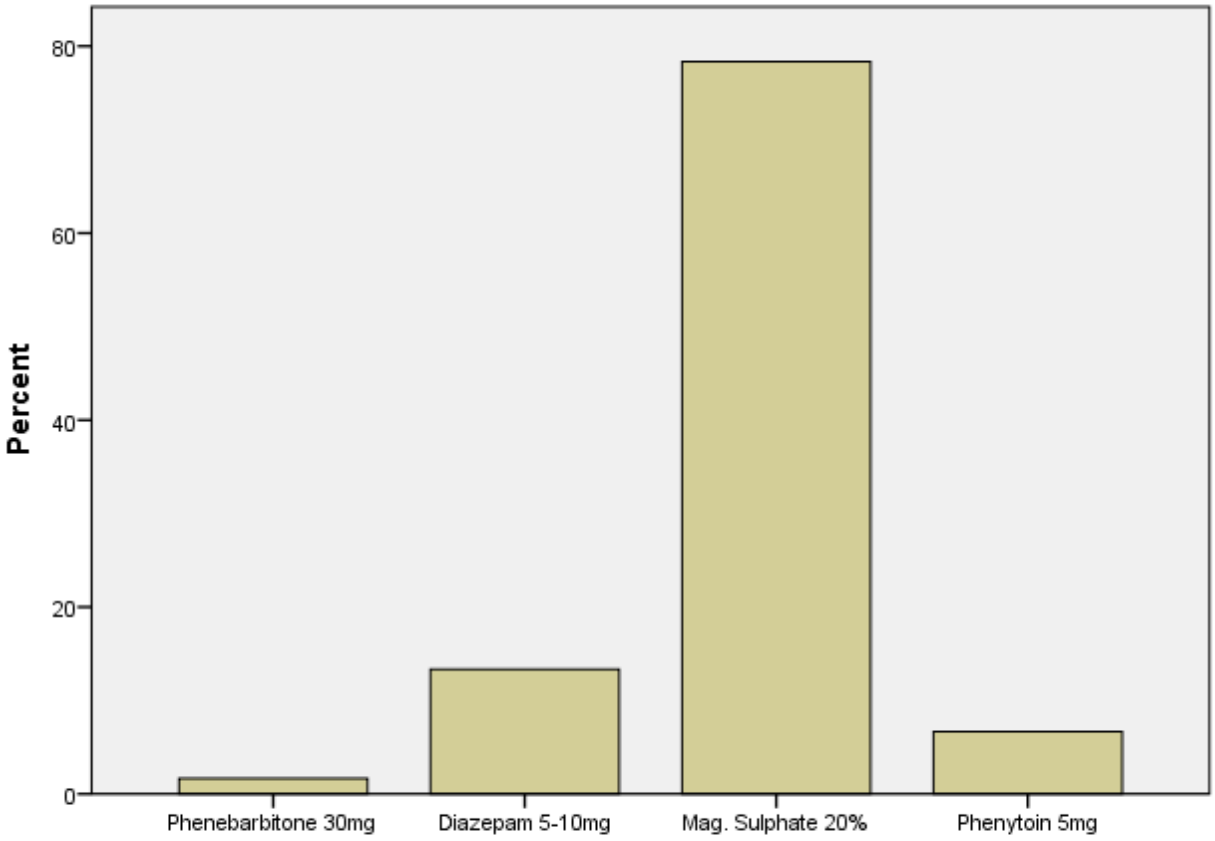


Figure 1.5: Nurse-midwives knowledge on recommended dose used for controlling convulsions

Nurse-midwives knowledge on recommended dose used for controlling convulsions

Figure 1.5 above shows that Majority of respondents (73%) were aware of recommended dose of Magnesium sulfate 20% solution, 4g iv slowly over 5-10 minutes OR 10 g of Magnesium sulphate, each buttock 5g with 50% solution deep IM.

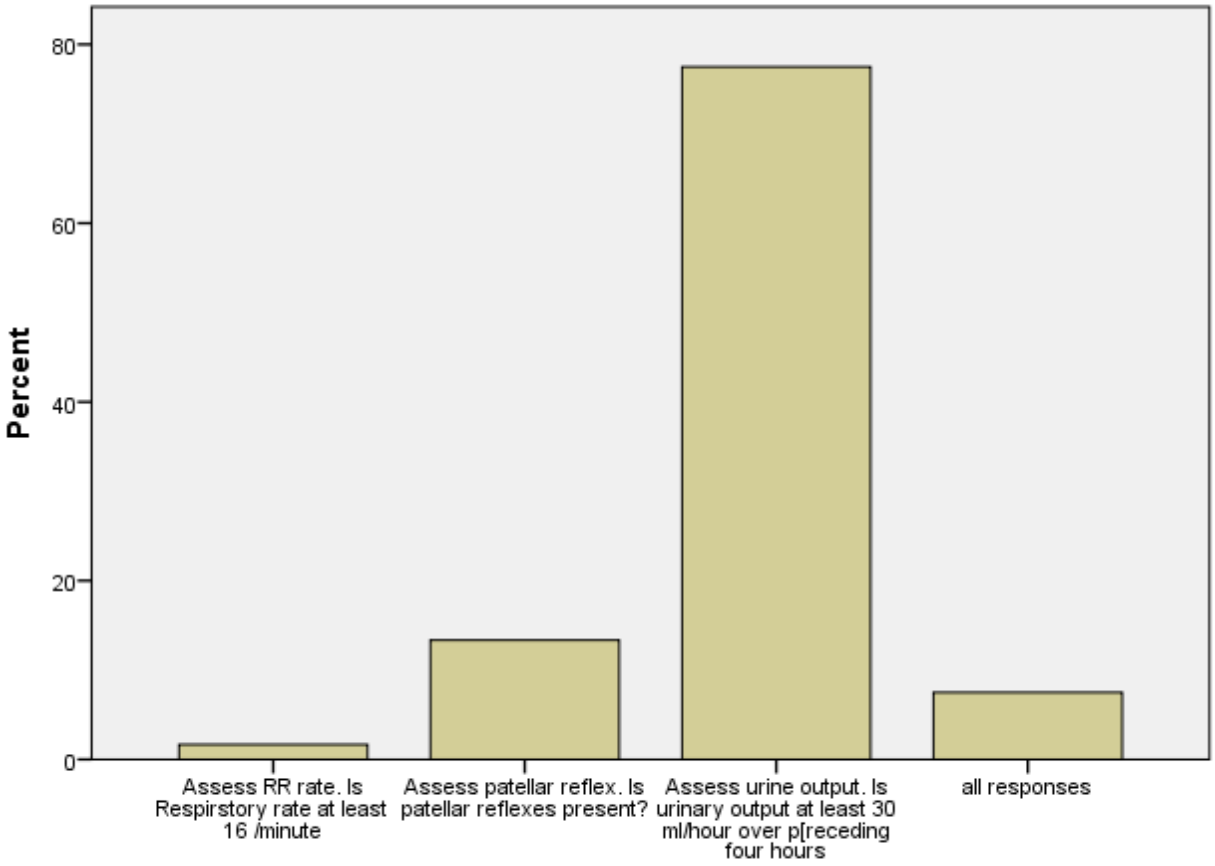


Figure 1.6: Nurse-midiwives knowledge on prevention of toxicity of MgSO4

Figure 1.6: Nurse-midwives knowledge on Prevention of toxicity of MgSO4

In figure 1.7 above, Majority of study participants (78%) had knowledge of assessing urinary output for the prevention of toxicity of drug. On the other hand, (98%) of respondent could not identify assessment of respiratory rate as the way of preventing toxicity of Magnesium sulphate. Moreover, 87% could not mention assessing patellar reflex as among the effort used in prevention of toxicity for Magnesium Sulphate. Only seven percent of respondents identified that, all three efforts are combined strategies for prevention of toxicity of magnesium sulphate.

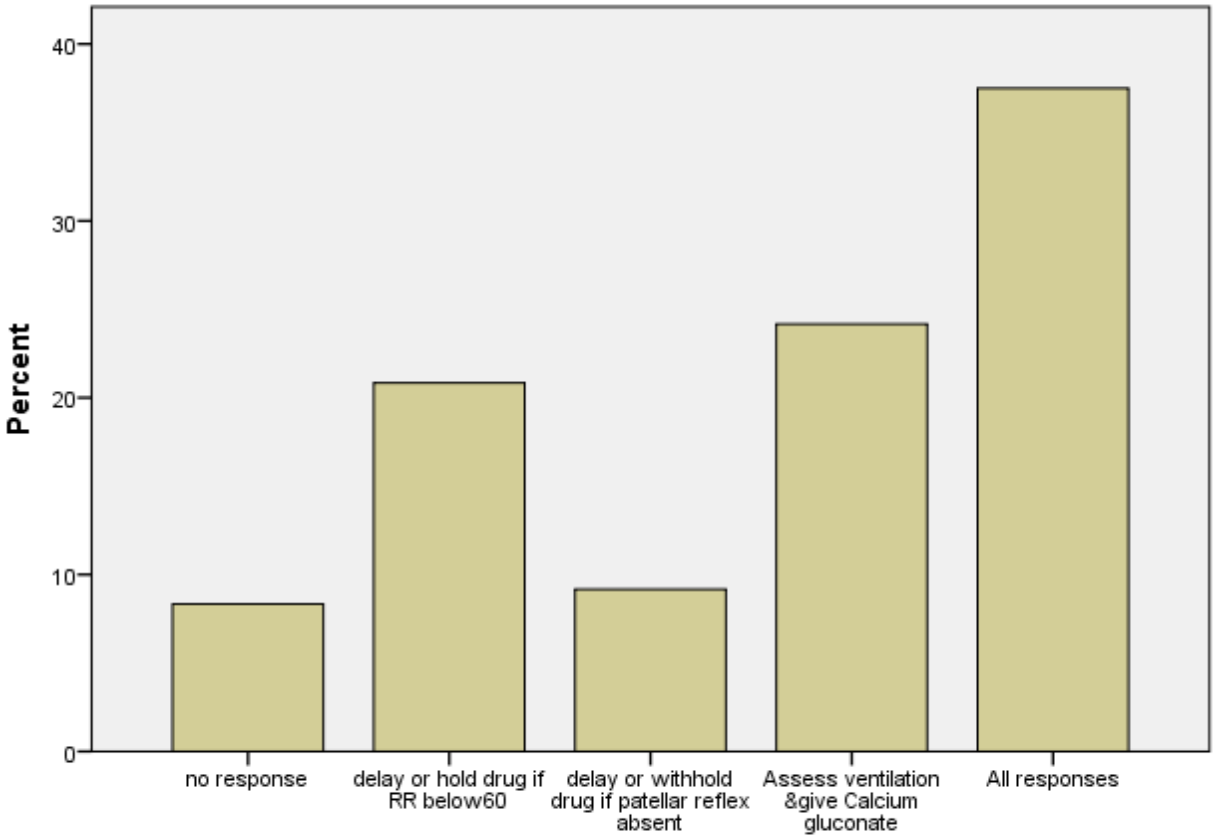


Figure 1.7 : Nurse-midwives knowledge on Immediate measures in case toxicity of MgSO4 occur

Nurse-midwives knowledge on immediate measures in case the toxicity of Magnesium Sulphate happen

Respondents were also asked to choose the immediate measure in case of toxicity of drug occur. From figure 1.7, it was observed that about 38% of the participants agreed with all three measures which are very important in case of magnesium toxicity occur. Only 9% of respondents mentioned withhold or delay the drug if patellar reflexes are absent and urinary output falls below 30 ml per hour over preceding 4 hours.

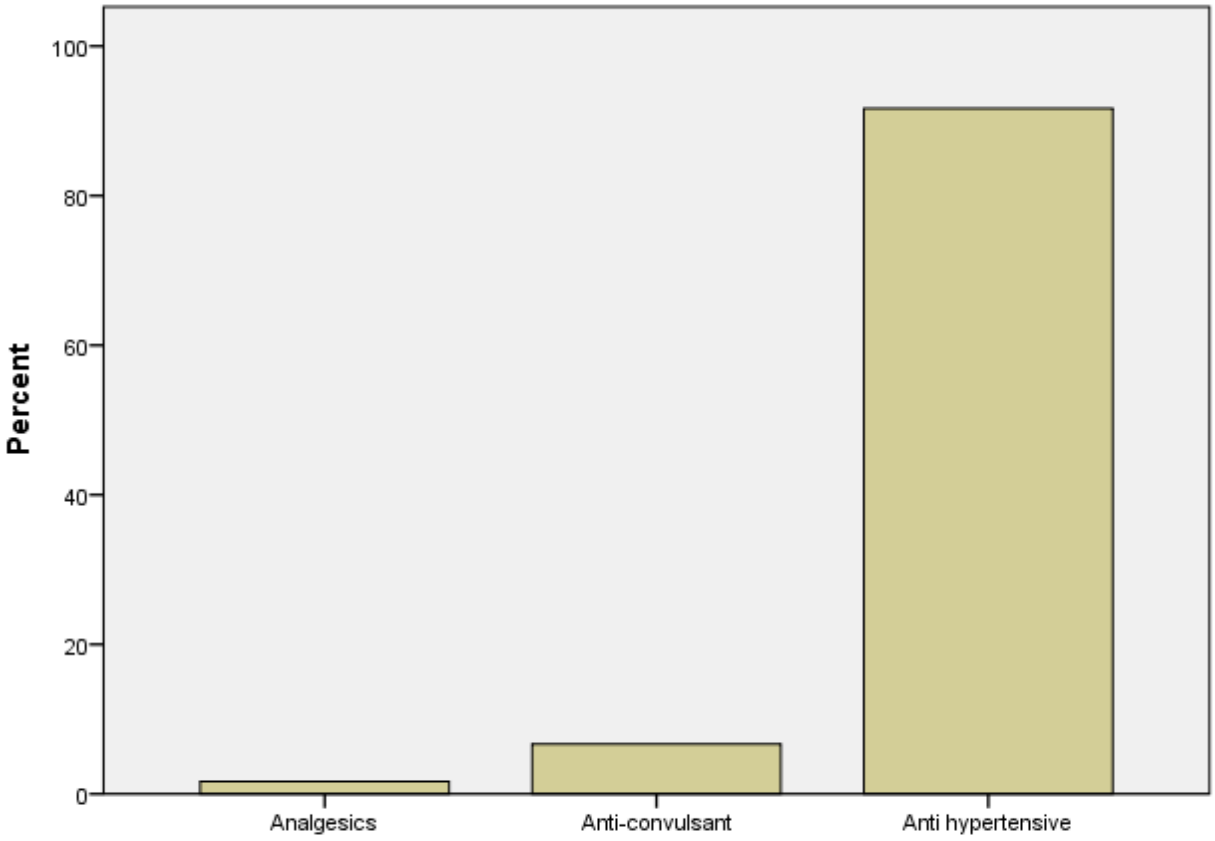


Figure 1.8: Nurse-midwives knowledge on recommended drug used, if diastolic BP remains above 110 mmHg

From this figure 1.8 above, Majority of respondents (98%) was able to choose correctly antihypertensive as recommended group of drug used if diastolic blood pressure remains above 110 mmhg.

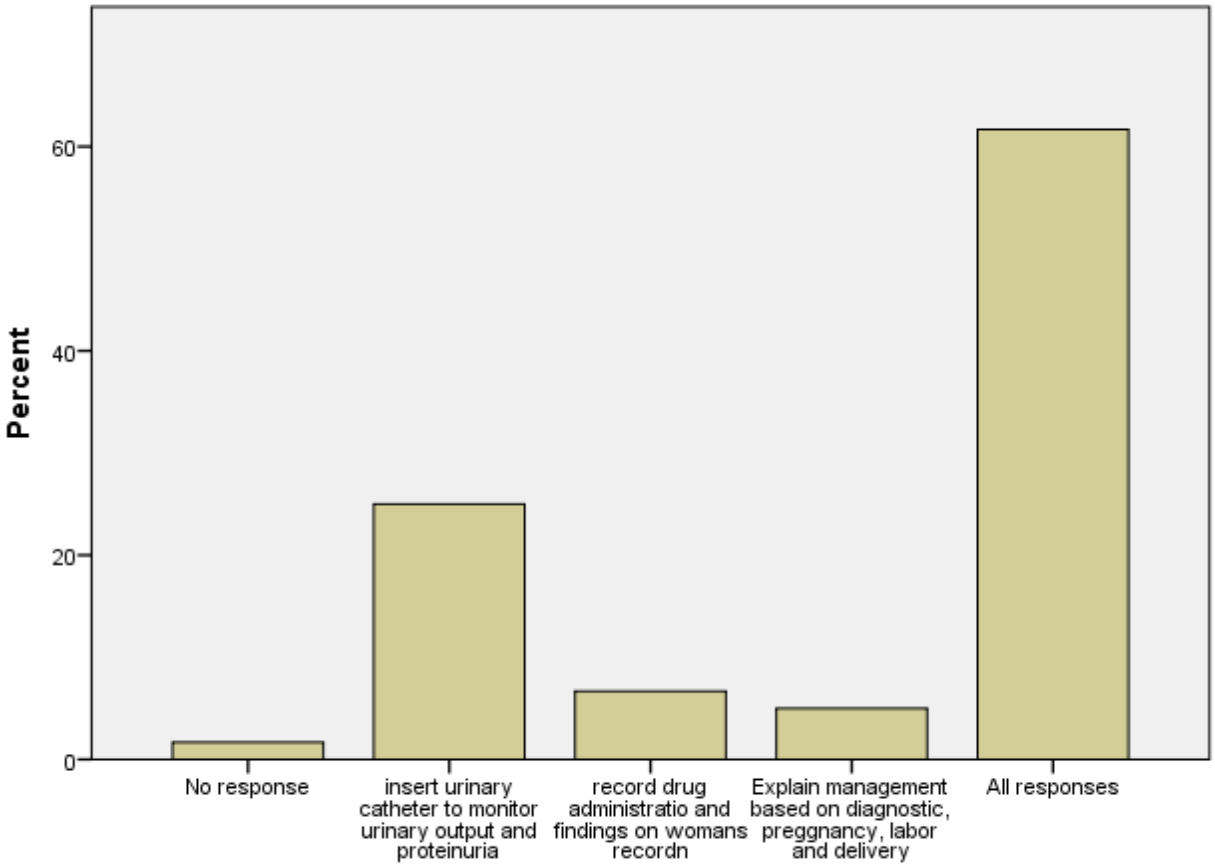


Figure 1.9:Nurse-midwives knowledge on other management of eclampsia

Nurse-midwives knowledge on other management of eclampsia

Figure 1.9 reflects that about 62% of respondents were able to choose all responses as a correct answer for other management of eclampsia. Also 25% mentioned insert urinary catheter,

To be declared knowledgeable on managing eclampsia each Nurse-midwife had to get correctly 9 questions out of 10 or (85+ %) for 1 mark in each question. Majority of participated Nurse-midwives scored higher in three questions, the recommended group of drug If diastolic blood pressure remain above 110mmhg (92%), the recommended drug used to control convulsion (86%), the recommended drug used to control High blood

pressure(98%).Scored moderately in recommended dose of that drug (73%) and immediate management during fits (73%), Other management of eclampsia(62%). On the other hand, most of the respondents (93%) could not respond correctly on prevention of toxicity of drug selected ($Mgso_4$) and Physical examination needed after convulsion/Fits (30%). Although only 22% of the respondents responded correctly on recommended IV line(R/L or N/S), Majority of them (66%) identified R/L as recommended IV line for managing eclampsia which are also correctly but they feared to use N/S as it will raise Blood pressure of women with eclampsia.

Table 4.1.3: Reference source at the work place for managing eclampsia

Title of reference	**Response**	**Percent of cases N=120**
BEMONC	10	8
Job Aid	16	13
Manual checklist	5	4
Total	**31**	**25**

Table 4.1.3 above shows that there is a low use of reference (checklist or guideline) as only 25% of respondent reported to use checklist. Job aid was the leading mentioned reference (13%) at work that guides management of eclampsia, while manual checklist was used only by 4 % of respondents.

Table 4.1.4: Barriers faced by Nurse-midwives in management of eclampsia

Kind of Barrier	**Response** *N	**Percent N=120**
Staff shortage or Insufficient number of Nurse to patient	50	42
Shortage/Irregular availability of drugs (Mgso4, and antihypertensive	70	58
Equipment shortage (B.P machine, monitor, suction)	60	50
Insufficient knowledge of Nurses	40	30
No special area for caring eclamptic patient	30	25

*N= multiple response

Shortage of drug and equipment shortage were among the leading Barriers reported by midwives in managing eclampsia as shown in table 4.1.4

Table 4.1.5: Midwives suggestion for improving management of eclampsia

Suggestion	**Response *N**	**Percent**
Need to have Training/seminars	**50**	**42**
Sufficient number of staff	40	33
Availability of drugs	70	58
Availability of equipment	60	50
Special space for caring eclamptic patient	40	33
Total	120	

Note*N Multiple responses.

Most of respondents suggested having proper availability of drugs for managing eclampsia like anticonvulsants and antihypertensive (70%), Equipments for assessing, monitoring and managing eclampsia like suction, monitor and oxygen equipments (60%) as reflected in table 4.1.5 above.

Nurse-midwives skills in managing eclampsia

Only 30 Nurse-midwives were observed their practice while they were working. Their score were as follow: Minimum29% (poor score), Maximum 67% (Average) Mean score was 44 (Average).

Table 4.1.6: Frequency distribution of Nurse-midwives Skills in managing eclampsia

Score	**Frequency**	**Percent**
50 -69	12	40
0-49	18	60
Total	30	100

Table 4.1.6, above shows that majority of respondents (60%) scored poorly (0 – 49) on skills of managing eclampsia while 40% of respondent scored average (50 – 69).

Table; 4.1.7: Nurse-midwives current skills in managing eclampsia

Step/Task	**No of Nurse-midwives who perform task completely or correctly**	**Percent**
Urgent mobilize available person	18	60
Encourages the women to lie on her side	9	30
Ensures the women airway open.	15	50
Observe color for cyanosis.	0	0
If available give oxygen at 4-6L/min	6	20
Check pulse	15	50
Check respiration	12	40
Check temperature	18	60
Checks fetal heart	27	90
Check Biceps or patellar reflex	0	0
Auscultate the lungs bases for rales	0	0
Start IV drip of Normal saline or ringer lactate	30	100
If diastolic BP remain above 110mmHg, give antihypertensive	27	90
Gives anticonvulsive drug to prevent or treat convulsion/fits	24	80
Insert an indwelling urinary catheter	27	90
Check urine for proteinuria	3	10
Assess clotting status with a bed side clotting test	0	0
If the woman begins having a convulsion, provide for care during	4	40

convulsion/Fits		
Never leave the woman alone	30	100
Check for signs of labour	27	90
Record drug administration, intervention, intervention and findings on the women's record	21	70
Maintain a strict fluid balance chart	3	10
Checks vital signs	3	10
Checks fetal heart rate	18	60
Check urinary output	3	10
Check patellar reflexes	0	0
Observe color for cyanosis and need	0	0
Auscultate the lung bases.	0	0
If rales are hard, withhold fluids	0	0
Check temperature every four hours	12	40
Check for signs of labor	24	80
Records all findings on the women's record	15	50
Share findings with the woman	0	0

In figure 1.7, the most of skills performed well by respondents were; start IV drip of normal saline or ringer lactate (100%), if diastolic BP remains above 110 mmhg, give antihypertensive (90%) Give anticonvulsive drug to prevent or treat convulsion/fit (80%), Insert an indwelling urinary catheter (90%). Majority of respondents could not perform well on turning the women to lie on her left side to reduce the risk of aspiration of secretions, vomit and blood (30%), observe color for cyanosis and need for oxygen (0%), Auscultate the lungs basis for rales (0%), check patellar reflex (0%), Assess clotting status with a bed side clotting test (0%), Check vital signs(10%) , check urinary output (10%) and share the findings with the woman.

Gaps identified between knowledge and practice

The main gap between knowledge and practice were as follows: In Knowledge the minimum score was 40%, Maximum score 80%, Mean score 63%. While in Skills minimum score was 29%, Maximum 67%, and Mean score 45%. Based on immediate management during fit/convulsions, Majority of respondents (73%), scored good in knowledge. But in Practice only 40% of respondents were able to perform correctly care of women during fit. About 55 % of participants scored good on knowledge care of women after convulsion. In practice there was no one of respondents observed color for cyanosis and need for oxygen which is one among element of care after convulsions and only (10%) of participants check vital signs correctly.

All participants could not be able to check patellar reflex (0%), auscultates the lung bases for rales to rule out pulmonary edema (0%), check urinary output (10%), and maintains a strict fluid balance chart (10%) and share findings with the woman (0%)

The gaps which were present to both knowledge and skills were based on physical examination needed after convulsion. Majority of respondents 70% in knowledge and 100% in skills did not know that they were required to observe color for cyanosis and need for oxygen, check for aspiration, lungs should always auscultated after the convulsion has ended and share the findings to a woman..

CHAPTER FIVE

Discussion

The general objective of this study was to assess the current knowledge and skills in the management of eclampsia among Nurse-midwives working at Mnazi Mmoja Hospital, Zanzibar. It is interesting to note that they are aware of current management of eclampsia (63%) they became aware through nursing/midwifery school and from observing colleague, only 33% received Job training unit. Most participants of this study were from age group of 31- 40 years (38%), followed by age group 41-50 (30%) which make the total of 68%. Maembe in year 2012, did a study on management of pre-eclampsia and eclampsia in Dar-es-Salaam public health facility and found nearly two third of health care workers were between 31-40 years (62%) and the majority were nurses, followed by the age of 40 and above. This indicates younger nurses work more in the hospitals.

Nurse-midwives knowledge in managing eclampsia

Despite this, the data obtained through self reporting questionnaire on knowledge in managing eclampsia revealed the proportion of nurse-midwives who had good knowledge on managing eclampsia was 43%, the result is similar to study done at Dar- es –salaam in public health facilities by Maembe 2012 that found out that the overall proportion of nurses with knowledge in managing patient with pre-eclampsia/eclampsia was 45%. Similarly a study done by Plotkin et al. (2012), this showed that 42% of Nurse-midwives were knowledgeable on managing eclampsia. These findings imply that though Nurse-midwives care for eclamptic woman in the ward, they do with insufficient knowledge.

Most participants from this study were not knowledgeable on physical examination (observe color for cyanosis and need for oxygen, check for aspiration; lungs should always be auscultated after the convulsion has ended, check vital signs and fetal heart rate) needed after convulsion (84%). These results are comparable to those reported from the study done in Pakistan which found that. With regards to eclampsia, physical examination scores for nurses

and doctors were mainly 'poor' (100%). though management scores especially among doctors depicted a better trend (fikree et al., 2003). Similarly the study is consistent with the study carried out by Ghebrehiwet 2006 which found that monitoring of eclamptic patient is poor, as only in one fifth (22.3%) of patient had their blood pressure monitored hourly, and in only14 percent had fetal heart beat measured hourly.

In this study participants were knowledgeable on recommended drug for controlling convulsion (89%), the result is similar to study done at Dar-es-salaam by Maembe 2012 which found the nurses who were knowledgeable on recommended drug for controlling convulsion was (95 %). Also the study is consistent to the study done by Plotkin et al. (2009) which revealed that 83% of the nurse scored highly on the knowledge of drug controlling convulsion (Magnesium sulphate).

Findings of this study shows that most participants were not knowledgeable on prevention of toxicity (assessing respiratory rate, patellar reflex and urinary output) of magnesium sulphate (93%) and immediate measure in case of toxicity of MgSO4 occur (93%); This is comparable to study done by Nepal society for obstetrics and gynecologist (2009) which indicated 74% of health care providers were not knowledgeable on monitoring of toxicity of magnesium sulphate at a baseline.

Skills in managing eclampsia

Data obtained from observation checklists in managing eclampsia revealed that 60% of respondents had poor skills (0-49%) in managing eclampsia. Only 40% score average, no one of respondents scored higher skills (85-100) or moderate skills (70-84). In Pakistan, a study done by Fikree et al 2003 found that 93.4% of nurses scored poorly (<50%) in competency of managing eclampsia. Only 6.1% scored well (50 -79) and there was no one who had higher skills (80-100). Similarly a study conducted by Agarwal, with support from Jhpiego and Maternal Integrated and Child Health Program 2012 on quality of care for screening and management of pre-eclampsia and eclampsia in six countries revealed that only 44% of

health care providers score well in four areas including management of severe pre-eclampsia and eclampsia.

Skills performed well by respondents were; start IV drip of Normal saline or ringer lactate (100%), if diastolic BP remains above 110mmHg, give antihypertensive (90%) Give anticonvulsive drug to prevent or treat convulsion/fit (80%), Insert an indwelling urinary catheter (90%). This is similar with the findings of the study carried out by Plotkin and her colleagues in Unguja and Pemba (2010) which noted providers skills score were; IV with Normal saline or Ringer lactate (72%), give Magnesium sulphate (83%) the difference was in providing antihypertensive (33%).

Skills which were not performed well were on monitoring part; check vital signs correctly (10%), check urinary output (10%), check patellar reflex (0%), observe color for cyanosis and need for oxygen (0%) and auscultates lung base for rales if rales are heard withhold fluids (0%). Grissinger (2009) reported that some of errors occurred following administration of IV Magnesium sulphate are fatal where most of them were result of unfamiliarity with safe dosage ranges and signs of toxicity, inadequate patient monitoring, mistakes in programming the pump, and mix-ups between magnesium sulfate and oxytocin.

These findings imply that Nurse-midwives have low understanding of importance of monitoring which are crucial part of caring critically ill patient and the main aims of monitoring are to detect organ dysfunction and guide in restoration of oxygen delivery to the tissue. Organ dysfunction may be monitored by several methods depending on the organ, for example urine output for kidney function. Toxic effect of Mgso4 can cause muscles paralysis so assessing patellar reflex and respiratory rate are very essential in minimizing a progression to respiratory distress or arrest. If patient monitoring is missed the care will be low standard or substandard. Schutte et al. (2008) define low standard care as mal-compliance with the recommendations in guideline and substandard care as all care factors that may have resulted in low standard of care and which have negative influence on the chain of event leading directly to maternal death.

Association of Knowledge with selected variables

The current study shows that, getting expertise in managing eclampsia at Nursing/midwifery school and at job training workshop (in-service training) has associated with knowledge in managing eclampsia with p = 0.005 and 0.002 respectively. These results are comparable to those reported from the study done in Nepal by USAID and Nepal Society for obstetrician and gynecologists 2009 which found providers who completed skilled birth attendant's in-services training performed better. Of the 250 providers who participated in a various round of assessment, 70 SBA trained providers scored on average of 89% versus 61% among the 180 non SBA trained providers.

From this study the relationship between selected variable and knowledge in managing eclampsia was observed and found that; age and professional qualification were not statistically significant associated with nurse's knowledge in managing eclampsia but significant association was found between place of getting expertise in managing eclampsia, on job training workshop and total year of experiences (table 4.6). This is similar with the findings of the Baby (2005) which indicate that there is no significance association between knowledge level of staff nurse and selected variable like age (x^2 =3.2) and professional qualification (x^2 = 0.69) but significance association was found between knowledge level and total year of experiences (x^2 = 4.3) and in-service education (x^2 = 8.23).

Barriers faced by Nurse-midwives in managing eclampsia

In this study the barriers (challenges) faced by midwives in managing eclampsia were shortage/irregular availability of drugs(58%), equipment shortage like monitor, BP machine and suction (50%), and staff shortage. This is similar with the findings of the study done by engender health in developing countries(2007), and study done by Mundle et al. (2011) in Indian hospital which indicated shortage of drugs, lack of manpower and equipment to manage preeclampsia and eclampsia were the barriers in managing eclampsia may not be a good predictor of treatment compliance.

Limitation of study

The observation study involved nurse-midwives from Maternity only as it would be difficult to observe nurses from other ward where there was no woman with eclampsia or to take nurses from other wards to maternity while they were needed to provide care to their patients. Following that reasons a study had few numbers of participants, therefore findings may not be representative of the general population of Nurse-midwives. This threatens the external validity of the findings hence another research on this area with large sample size is required

Observation like other methods has its own limitation in evaluation method, if persons who are being observed know they are being observed they may act unusual and present wrong actions, speech, thoughts and emotions as they may be nervous (Andrew, 2008). However literature suggests that the change of behavior is usually temporary, where there is a tendency for the observed to become used to the presence of the observer, they continue to perform their activities according to their normal day to day practice. In this study the observer stayed for a while in the ward as a participant observer.

Conclusion

The study revealed that Nurse-midwives who participated in this study demonstrated knowledge and practice gaps in the area of managing woman with eclampsia. The most gaps identified were physical examination needed after convulsion and assessing a woman for toxicity of magnesium sulphate (respiratory rate, urinary output and patella reflex). Provider's practices are not at appropriate level or in line with guidelines. Few Nurse-midwives reported to have attended in service training on managing women with eclampsia.

Getting expertise on managing eclampsia from Midwifery/Nursing schools, on job training workshops and years of working experiences were associated with knowledge on managing women with eclampsia. Resuscitation equipment and essential drug for managing eclampsia are not enough and not regularly available. Enough provision of drugs, equipments and in service training were suggested among the ways of enhancing management of women with eclampsia.

Recommendation

In the attempt to improve care of women with eclampsia efforts should be made by hospital administrators to ensure that there are adequate equipment and supplies for assessing and managing patients (example cardio pulmonary monitor, oxygen, suction and BP machine) with eclampsia. Auditing committees should have regular checks of the equipment and formulate special strategies for replacing any missing or deffective equipment.

Hospital administration should formulate operational team that will assess and ensure the adherence of checklist/Guideline use in managing women with eclampsia; this will help in improving quality of care in the management of eclampsia.

Hospital administrators should make sure improvement of Nurse-midwives knowledge and practice should be parallel with the improvement of resuscitative equipment and essential

drugs for managing eclampsia. This should be done through continuing education, seminars and in service training.

Nursing school should prepare intensively their student to care for women with eclampsia. Assessment of magnesium sulphate toxicity and immediate measure in case toxicity occur together with hourly monitoring of patient with eclampsia should be well emphasized during basic nursing education programmes to ensure student graduate with sufficient competencies to take care of patients confidently.

An observation study involving larger sample size of Nurse-midwives from different hospitals of Tanzania can be done to assess the real picture of Nurse-midwives practice in managing eclampsia.

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Appendix I : Knowledge on Questionnaire (English Version)

TITLE: MIDWIFE COMPETENCE FOR MANAGEMENT OF ECLAMPSIA IN ZANZIBAR

Participants: Midwives.

Part one: Demographic data.

Instructions:

Please fill or encircle appropriately:

ID……..

1. **Age……**
2. **Working area / ward**

   ……

3. **level of education**

a) Primary
b) Secondary O= level
c) Secondary A-level
d) College
e) University
f) Other (Please specify)……..

4. **level of Midwifery education**

a) Certificate
b) Diploma
c) Advanced diploma
d) Degree
e) Other (please specify)……..

5. **For how long have you been practicing clinical midwifery?**

   Years……

Part two: Training Information in managing Eclampsia

Instructions

Please circle the one most correct answer in each multiple choice question.

6. **Do you know current management of eclampsia?**

a) Yes

b) No

If no please give reason

……

……

7. **Where did you get expertise in managing eclampsia?**
    a) At Midwifery/Nursing Schools
    b) At job training workshop
    c) When observing my colleague performing it on a woman
    d) From Job Aid references
    e) Other Please specify……..
8. **In which year did you get expertise on managing eclampsia?**

a) 2013

b) 2012

c) 2011

d) 2010

e) 2009

f) Other (Please specify)…….

9. **Have you ever use checklist in managing eclampsia?**

    a) Yes
    b) No

10. If No Please give reasons……

……

…… ……..

Knowledge on emergence care in managing eclamptic fits

11. What are the immediate managements during fit?

a) Wipe the frothy saliva from the patient mouth, check for patient linen, If soiled changed and cover with clean linen,
b) Shout for help, to urgently mobilize available personnel, gather equipment(oxygen, mask and bag, suction and air way), Turn the woman to lie on her left side to reduce the risk of aspiration of secretions, vomit and blood,
c) Ensure the woman airway is open, Assess breathing, if the woman is not breathing begin resuscitation measures, give oxygen 4-6 liters per minute by mask or cannulae, evaluate pulse, If absent initiate CPR and call arrest team, Prevent her injury but not actively restrain.
d) A and C
e) Band C

12. What are the cares of women after convulsion?

a) If available give oxygen 4-6 liters per minutes by mask or canula.
b) Observe color for cyanosis and need for oxygen.
c) Aspirate the mouth and throat as necessary, encourage the woman to lie on her side to reduce the risk of aspiration of secretions, vomit and blood, Ensure woman air way is open
d) A and c
e) All of the above

13. What kind of assessment/physical examination needed after convulsions/Fits

a) Observe color for cyanosis and need for oxygen, check the legs, and put side rails to prevent falling down of patient.

b) Observe color for cyanosis and need for oxygen, Check for aspiration: lungs should always ascultated after the convulsion has ended, Check vital signs and fetal heart rate.

c) Check Vital signs, check fetal heart rate and consult a doctor for caesarian section.

d) Auscultate the lungs; examine the mouth and level of consciousness.

14. The recommended intravenous line for managing eclampsia is

a) Dextrose in Normal saline (DNS)

b) Normal saline (NS)

c) Dextrose 5% (5% Dextrose)

d) Ringer lactate (RL)

e) B and d.

15. The Recommended drug used to control convulsion in management of eclampsia is

a) Phenebarbitone

b) Diazepam (Valium)

c) Magnesium sulfate

d) Phenytoin sodium

16. The recommended dose of that drug(selected in question 15) during control of convulsion is

a) Give Phenebarbitone 30 mg im state

b) Give diazepam 5-10 mg IV state

c) Gives Magnesium sulfate 20% solution, 4g iv slowly over 5-10 minutes OR 10 g of Magnesium sulphate, each buttock 5g with 50% solution deep IM injection with 1 ml of 2% lignocaine in the same syringe.

d) Give Phenytoin sodium 5mg state IM

17. What is the prevention of toxicity of drug selected in question 15?

a) Assess respiratory rate. Is respiratory rate at least 16 per minute?

b) Assess patellar reflexes. Is Patellar reflexes present?

c) Assess urinary output. Is Urinary output at least 30 mL per hour over preceding four hours?

d) All of the above.

18. What are the immediate measures in case the toxicity of the drug selected in question 14 happens?

a) Withhold or delay the drug if respiratory rate falls below 16 per minute

b) Withhold or delay the drug if Patellar reflexes are absent and Urinary output falls below

30 ml per hour over the preceding 4 hours.

c). Assess ventilation and give Calcium Gluconate 1gm (10 ml in 10% solution).

d). All of the above.

19. If diastolic Blood Pressure remains above 110mmhg, the recommended group of drug used is

a. Analgesic drugs
b. Anticonvulsant drugs
c. Antihypertensive drugs
d. Anti emetics drugs

20. Others management of eclampsia include

a) Insert an indwelling urinary catheter to monitor urinary output and proteinuria, Do a bed side clotting test, never leave the woman alone(convulsion followed by aspiration of vomit may cause death to a woman and fetus)

b) Record drug administration and findings on the woman's record, Share your findings to a woman and as appropriate to her partner or family member

c) Explain management, based on diagnosis, and the importance for pregnancy, labor and delivery.

d) All of the above.

Part three: Guidelines, barriers and Opinions in managing eclamptic patients

21. List at least one guideline/reference at your work place that guides how to manage Eclamptic patients

    ……

    ……

    ……

    ……

22. What barriers do you face in the management of women with eclampsia?

    ……

    ……

    ……

23. What would you like to suggest in enhancing management of woman with eclampsia?

    ……

    ……

    ……

    …

Thank you for your time and f or your participation

Appendix II : Observation Checklist

Checklist: Management of eclampsia

Researcher or Research Assistances can use the guide to assess skills while Nurse-midwives care for women with severe pre-eclampsia and eclampsia.

Directions

Rate the performance of each step or task using the following rating scale:

1 = Performs the step or task completely and correctly.

0 = Unable to perform the step or task completely or correctly or the step/task was not observed.

N/A (not applicable) = Step was not needed.

Checklist: Management of eclampsia						
STEP/TASK	**OBSERVATIONS**					
Date						
Immediate management						
1. Urgently mobilizes available personnel.						
2. Encourages the woman to lie on her side						
3. Ensures the woman's airway is open						
4. Observes color						
5. If available, gives oxygen at 4–6 L per minute by mask or cannulae.						
6. Checks pulse						
7. Checks respirations						
8. Checks temperature						

Checklist: Management of eclampsia					
STEP/TASK	**OBSERVATIONS**				
9. Checks fetal heart					
10. Checks the biceps or patellar reflexes					
11. Auscultates the lung bases for rales					
12. Starts an intravenous drip of normal saline or Ringer's lactate					
13. If diastolic blood pressure remains above 110 mm Hg, gives antihypertensive drugs					
14. Gives anti-convulsive drugs to prevent or treat convulsions / fits					
15. Inserts an indwelling urinary catheter					
16. Checks urine for proteinuria					
17. Assesses clotting status with a bedside clotting test					
18. If the woman begins having a convulsion, provides for care during the convulsion					
19. Never leaves the woman alone					
20. Checks for signs of labor					
21. Records drug administration, interventions, and findings on the woman's record					
Monitor women with eclampsia - hourly					
22. Maintains a strict fluid balance chart					
23. Checks vital signs					
24. Checks fetal heart rate					
25. Checks urinary output					
26. Checks patela reflexes					
27. Observes color					
28. Auscultates the lung bases					

Checklist: Management of eclampsia					
STEP/TASK	**OBSERVATIONS**				
29. If rales are heard, withholds fluids					
30. Checks temperature every four hours					
31. Checks for signs of labor					
32. Records all findings on the woman's record					
33. Shares findings with the woman					
Points for skill/activity					
A: Total points for case observed					
B: Total points that were N/A					
C: Total possible points for the case observed = 33 minus B					
Score = (A divided by C) multiplied by 100					

Appendix III : Informed consent



MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

CONSENT FORM

ID NO | | | | | | | | | | | |

Consent to participate in a study: entitled "KNOWLEDGE AND SKILLS ON MANAGING ECLAMPSIA AMONG NURSE MIDWIVES WORKING AT MNAZI MMOJA HOSPITAL ZANZIBAR"

Greetings! My name is Rahma Jaruf Jaffar, 2nd year student MSc, critical care and trauma at Muhimbili University of Health and Allied Sciences (MUHAS), working on this research project with the objective of assessing the knowledge of managing eclampsia among Nurse-midwives working in Mnazi Mmoja Hospital Zanzibar.

Purpose of the study:

The study will involve Nurse-midwives working at Mnazi Hospital, Zanzibar. Conducting the study will enable to assess the existing knowledge and skills of Nurse-midwives in Mnazi Mmoja Hospital, regarding management of eclampsia.

Participation in this study:

The study will involve nurses who work in Mnazi Mmoja Hospital, Zanzibar. If you agree to participate in the study, participants will be required to answer interview questions from questionnaires and some of you will be observed while managing woman with eclampsia

Confidentiality:

All information collected during this study will be kept strictly confidential and will not be revealed to anybody outside the research team.

Risks:

We do not expect that any harm will happen to you because of joining this study. Sometimes you may feel tired / exhausted, due to the nature of the illness, but you will be able to stop to interview temporarily or decline at any time if you feel too uncomfortable.

Rights to withdraw and alternatives

Taking part in this study is completely your choice. If you choose not to participate in the study or if you decide to stop participating in the study you will continue to work as you would normally do in the hospital. You can stop participating in this study at any time even if you have already given your consent.

Benefits:

There will be no direct benefit to you from participating in this study. However, the information that you provide may help health care teams and others to provide insight of learning needs *to* the nursing education program. The findings are also expected to gather information which will be utilized as a baseline data in future related research in this area, Recommendation that will be given, are going to be beneficial to the public at large, on minimizing maternal. Morbidity and mortality from eclampsia

In case of injury

We do not anticipate that any harm will occur to you as a result of participation in this study. However if any physical injury resulting from participation in this study should occur, we will provide you with medical treatment according to the current standards of care in Tanzania. There will be no additional compensations to you.

Who to contact:

If you ever have questions about this study, you should contact the study coordinator or principal investigator Mrs Rahma Jaruf Jaffar. Tel- 0773-027864 Muhimbili University, of Health and Allied Sciences, P.O. Box 65001 Dar es Salaam. If you ever have questions about your rights as a participant, you may call Prof. Mainen J. Moshi, Chairman of the Senate Research and Publications Committee. P.O. Box 65001, Dar es Salaam. Tel 2150302-6 2152489

Signature:

Participant agrees…….. Participant does NOT agree ……

I _____ have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant _____

Signature of research assistant _____

Date of signature _____

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

Directorate of Postgraduate Studies

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

12th June, 2013

Ms. Rahma Jaruf Jffar
MSc. Nursing Critical Care and Trauma
MUHAS.

Re: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "KNOWLEDGE AND SKILLS ASSESSMENT OF MANAGING ECLOAMPSIA AMONG NURSE-MIDWIVES WORKING AT MNAZI MMOJA HOSPITAL, UNGUJA, ZANZIBAR"

Reference is made to the above heading.

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

Thus ethical clearance is granted and you may proceed with the planned study.

Please liaise with bursar's office to get your research fund.

Prof. O. Ngassapa
DIRECTOR, POSTGRADUATE STUDIES

/emm

c.c. Vice Chancellor, MUHAS
c.c. Deputy Vice Chancellor–ARC, MUHAS
c.c. Dean, School of Nursing, MUHAS

MNAZI MMOJA HOSPITAL

ZANZIBAR

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Ministry of Health
P. O. Box : 672
Zanzibar

Ref No : MMH/274/2013

Date: 13 June, 2013

PERMISSION TO CONDUCT A STUDY IN MNAZI MMOJA HOSPITAL

To whom it may concerned,
Mnazi Mmoja hospital

NAME OF RESEARCHER	RAHMA JARUF JAFFAR
RESEARCH TITLE	KNOWLEDGE AND SKILLS ON MANAGING ECLAMPSIA AMONG NUTRSE-MIDWIVES WORKING AT MNAZI MMOJA HOSPITAL ZANZIBAR
TYPE OF RESEARCH	QUANTITATIVE
VALID BETWEEN	15/6/2013 - 30/6/2013

The above named has been allowed to conduct the stated research at Mnazi Mmoja Hospital.

Please accord her the necessary assistance.

Sincerely

.....

Omar A. Ali

Hospital-Secretary.....

Mnazi Mmoja hospital