

Exploration of Knowledge and Practice of Nurse Midwives on Prevention and Management of Post- Partum Haemorrhage at Mnazi Mmoja Hospital, Zanzibar

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Abstract: Post-partum haemorrhage is a one among leading causes of maternal mortality globally. Lack of manpower and appropriate equipment makes this problem incomparably high in poorer African settings than developed countries. Training, planning and effectively utilization of the few available equipment and personnel would make a difference in most African settings including Zanzibar. Studies in this area would inform the gap in knowledge equipment and manpower deficit in which if settled PPH and maternal mortality will be reduced.

Aim: This study aimed atexploring the knowledge and practice of nurse midwives on prevention and management of post- partum haemorrhage at Mnazi Mmoja Hospital, Zanzibar

Setting: Mnazi mmjoa Hospital in Zanzibar Urban/West.

Methods: A descriptive cross sectional qualitative study design was conducted in which face to face interview was conducted with each nurse (n=15) at obstetric department/section on issues pertaining to PPH. English interview guide was used during the discussion and the voice recorder was used to record the conversations. Meanwhile the researcher noted down important points and events as the discussion proceeded. After each interview key points were summarized in the presence of interviewee for confirmation and further elaboration where necessary. All recorded interviews were transcribed and translated per verbatim. The translated transcripts were coded by using different colors in Microsoft Word computer program.Codes were assembled in small meaning units and these units were later gathered (depending on their relationship to each other) to create categories which are the results for this study.

Results: The pre-determined theme for this study was the status quo of PPH at Mnazi Mmoja Hospital. Under this theme five categories were formed, the five theme are; PPH as a serious situation, Causes and risk for PPH, assessment and management of PPH, preparedness as prevention of PPH and areas of inconsistency.

Conclusion: There substantially good knowledge among midwives concerning risk factors, prevention, and monitoring a PPH event. However there are insufficient staff (to form a team) and necessary equipment to handle an event of PPH.

Keywords: PPH (Post- Partum Haemorrhage), Nurse – midwives, Knowledge, Management of post partum haemorrhage, Prevention.

1. INTRODUCTION

1.1 Background information:

The global burden of maternal death is estimated at 556 deaths per 100,000 live births (MoHSW, ICF International 2016) though there is reduction of about 44% from 1990 to 2015.Of these maternal deaths 127,000 are said to be due to post partum hemorrhage (WHO, 2015).

Post partum hemorrhage (PPH) is defined as the excessive blood loss after childbirth of more than 500ml after spontaneous vagina delivery (SVD) or 1000ml after C/S. It may be primary post partum hemorrhage which occurs immediately after delivery or secondary post partum hemorrhage which is a delayed bleeding occurring within two weeks after delivery (Mukherjee and Arulkumaran, 2009). The causes of PPH are the tone of uterine or distended bladder, laceration of uterus, cervix or vagina, tissue or clot retained in the placenta and pre-existing or acquired coagulopathy. Of these causes, uterine tone is the main cause of PPH attributing to up to 70% of all cases (Montufar-Rueda *et al.*, 2013). There are various risk factors of PPH, some of which are multiple pregnancies, anemia in pregnancy, previous history of PPH, prolonged labor and getting pregnant at the age older than 35 years (Frass, 2015).

The study done by Maya and colleagues (2013) revealed that post partum haemorrhage is a one among big problem which leading the direct cause of maternal death in developing countries such as Tanzania. The overall worldwide prevalence rate PPH approximately 6 - 11% (Lockhart, 2015).

According to (WHO 2009) PPH is the primary cause of nearly one quarter of all maternal death global. About 0.4 women per 100,000 deliveries die from PPH in the United Kingdom. Africa has high about 10.5%, about 150 women per 100,000 deliveries die in Sub-Sahara Africa. In Tanzania PPH causes 25-28% of all maternal death, due to uterine atony account for more than 75% (TDHS, 2010). In Zanzibar maternal deaths caused by postpartum haemorrhage and antipartum haemorrhage was 44%. The current rate of PPH is 287 per 100,000 (Maya *et al.*, 2013).

The study done by (Anderson and Etches, 2007) indicate that, consequences of the problem vary from one to another, because of its cause, may result Hypovolemic shock followed with anaemia, Occult myocardial ischemia, dilution coagulopathy, septicaemia and death. PPH causes considerable suffering for women and their families, the woman has role to be a wife and a mother for her family existence. Therefore morbidity may cause mother can not able to lactate her baby, also may get post partum mental alterations or mortality affect the functioning of the entire family as well as the nurturing of her children also families and community's income affected because of her reduced productivity. Also has heavy burden on health system, woman is an important part of a country's workforce her disability has an impact on society as a whole not only that but also mortality causes increasing the number of orphans and some become street children, prostitutes and some deal with criminal issues in the nation (LaPierre 2010).

There are efforts taken by WHO in different countries in order to reduce the rate of maternal death caused by PPH. One of the measures was published the guideline book called WHO recommendation for prevention and treatment of post partum haemorrhage (WHO 2012). The Governments of Tanzania and revolution of Zanzibar (SMZ) have also taken serious efforts to improve maternal health and reaching the MDG5 targets. Some of the efforts taken were to provide guideline books, drugs, in each health facility, as well as capacity building to their health workers (Ministry of Health and Social Welfare, 2015).

Example Advanced Life Support in Obstetric (ALSO) training, Basic Emergency Obstetric and Newborn Care (BEMONC), Emergency Obstetric and Newborn Care (EMONC) and training of how to conduct (steps) of Active Management of Third Stage of Labour (AMTSL). Also governments planned to emphasize on access to and quality of family planning services, care at birth and commodity security to maximize health outcomes for women. Not only that but also encourages the pregnant women to attend antenatal clinic soon after they conceive, to deliver at hospital, also to provide training to the traditional Birth Attendants (TBAs) and motivate them to transfer at hospital the mother who come at their home for delivery. (Cuthbertson *et al.*, 2015) Also Tanzania established National Package of Essential Reproductive and Child Health Interventions in 2000, the Package includes provision of antenatal care, care during child birth, EMOC and Post partum care. In 2003 National Policy Guideline for Reproductive and Child Health Services was developed and Reproductive and Child Health Strategy was developed (Shija *et al.*, 2011).

Despite of those interventions taken by Tanzania and Zanzibar still we didn't reach the MDG5 target and the gap remain high to reach the target of severe burden of PPH. Still we have a long way to go so as to fill the Sustainable Development Goal (SDG) number 3 target 3.1 where the goal set is to reduce death to 70 death in 100,000 by 2030 few studies have examined the knowledge of health workers in order to prevent and manage PPH in Zanzibar.

1.2 Literature review:

1.2.0 Introduction on literature review:

The reviews were conducted by searching the English Language medical literature using online search engine Google scholar. The relevant strategies were identified Assessment of level of knowledge among Nurse Midwives on prevention

and management of post partum haemorrhage at maternity ward, Mnazi Mmoja hospital Zanzibar. The information gathered was arranged according to the study objectives.

1.2.1 Knowledge of nurse midwives on preventive measure of PPH:

The World Health Organization recommends that each woman giving birth should be administered uterotonic during the third stage of labour (TSL) for prevention of PPH (WHO 2009). Use of oxytocin and uterotonic agent blood loss was less and administration of mesoprostol is safe during home delivery in Brazil (Emerich Lentz Martins *et al.*, 2016). The same guideline proposes Oxytocin (IM/IV, 10IU) as the uterotonic drug of choice. Other injectable uterotonics and Misoprostol are recommended as alternatives for prevention of PPH in settings where Oxytocin is unavailable. In the U.S. however, AMTSL is considered the gold standard for reducing incidence of PPH by using non-drug intervention (control cord traction and clamping) and uterotonic by using skilled health care workers. Misoprostol used at home during delivery (Bell, 2013).

Midwives/nurses have higher knowledge about post partum care. They check mother's vital signs in order to detect many fatal complications such as PPH. Which is the first leading cause to maternal mortality worldwide and Saudi Arabia (El-sabaa, Oweedah and Alhazmi, 2015)

Majority of midwives have high (66.7%), 50 (28.2%) they have moderate knowledge on AMTSL, and 9 (5.1%) have low knowledge (Oyetunde and Nkwonta, 2015)

Oxytocin was used in 59% of cases in India, use of AMTSL by definition of International Confederation of Midwives and International Federation of Gynaecology (ICM/FIGO) was 61%. Normal delivery care course definition (use oxytocin within one minute of birth) was 69%. Supervision and handholding is now required to prove the knowledge about AMTSL. Only 43% of respondents know about the correct sequence of steps of AMTSL (Tiwari 2016.)

Not only that but also in Australia using oxytocin (at hospital), mesoprostol (at community) 22 cases can be prevented. 6, 4, 130 and 42 women would require additional uterotonics, blood transfusion, shivering, and extra respectively. Costs saving (US\$320) compare to oxytocin/no treatment. If mesoprostol used in hospital and community no treatment using oxytocin at hospital 37 cases can be prevented, 10, 6, 217 and 70 would have uterotonic, blood transfusion, shivering and fever respectively. Cost saving (US\$533.) (Lang, Zhao and Robertson, 2015)

At labour ward of Kiambu district hospital 22 midwives were assessed among them 68.2% were trained on AMTSL. Which is the prevention key. 18 were observed while conducting delivery 100% administration of uterotonic, 95.5% controlled cord traction, 86.4% uterine massage, 77.3% knowledge that administration of uterotonic should be within a minute of delivery infant, 13.6% on observation during delivery manage to administer within this time. 44.4% Competence on AMTSL practice on observed delivery (Mutete 2015)

The majority of midwives performed well on use of oxytocin (87.4%), uterine massage (72.4%) and (51.2%) of midwives get training about AMTSL at the midwifery/nursing school at Dar es Salaam municipal hospital (Ramadhani, 2011)

1.2.2 Management of PPH by nurse midwives:

Although there are several guidelines on treatment of PPH, the one guideline that is acceptable is that of the World Health Organization (2009). In this guideline according to drug dose for management of atonic PPH are Oxytocin IV infuse 20 units in 1 litre IV fluid at 40 drops per minute, Ergometrin/Methyl-ergometrine IM or IV (slowly) 0.2mg, 15-Methyl prostaglandin F2a IM 0.25mg. Management of retained placenta is 10IU of Oxytocin in combination with controlled cord traction (Gulmezoglu, Souza and Mathai, 2012). There are other procedures included in this process as recommended by both the World Health Organization and other guidelines and reports such as non-drug intervention (control cord traction and clamping) combined with uterotonic by using a skilled health care worker (Bell, 2013). Furthermore fluid resuscitation and tranexamic acid is encouraged for recovery from PPH as the mother is losing too much blood and other fluids (WHO, 2012). It is recommended that for this process to be successful, four components of management which are communication, resuscitation, monitoring, investigation and arresting bleeding should be actively employed (Cuthbertson *et al.*, 2015). It is also recommended that, if the cause is uterine atony, uterine compression should be done, emptying the bladder then Ergometrine 0.5mg slow IV. OR IM syntometrine, misoprostol 800 microgram per rectum. If bleeding continues surgery should be considered and haemostasis continued until bleeding stops (WHO 2012).

In most African studies management of TSL follows the WHO recommendations which is Oxytocin 10 units IM if not

available, use Ergometrine 1 ampoule IM or Misoprosol 400-600mcg. other management are controlled cord traction and to do uterine massage (Sangwi and Harshad, 2006). Initial management include identifying PPH, determining the causes and implement appropriate interventions based on the aetiology. Management of PPH varies according to available resources, management techniques, such as uterotonic medications, external uterine message, and bimanual compression. Procedures in management includes manual removal of the placenta and clots, uterine balloon tamponade and uterine artery embolization, laceration repair of genital tract trauma (Johnson et al., 2012).

In Nigeria the manual removal of placenta and placenta bits was done in 61.8% and repair of tear/laceration was documented in 16.2% in tertiary facilities. In the secondary manual removal of placenta was 25% cases and single case of tear/laceration repair. Vital sign monitoring was done in 91.2% cases (Olowokere, 2013)

1.2.3 Assessment of knowledge about PPH and strategies to overcome the gap among nurse midwives:

PPH is the major cause of maternal mortality worldwide. In Karachi 26 (1.7%) patients among 4193 who delivered had PPH. 18 (69.2%) had primary PPH, 8 (30.8%) had secondary PPH. Most common causes are: Uterine atony 6 patients, cervical and vaginal tear 6, uterine inversion 2, morbidity adherent placenta 2 and placenta previa 2 (Edhi et al., 2013)

In Sudan it was revealed that, participants had long experience varies from 11 to 30 years but only 30% of them received in service training about PPH. Nurse midwives generally had good knowledge about Post partum hemorrhage was (78%). Their knowledge about assessment and management, sign, Prevention and definition, types, common causes were (84.2, 82.5, 82 and 81.3 %) respectively less knowledge about complication and risk factors of PPH were 73.5 and 64.2% respectively. (Faidha, 2015).

Among 1188 women delivered at Uganda 1.2% (95% CI 0.6-2.0%) were got severe post partum hemorrhage (1000mls or more). Most women receive a uterotonic after birth for PPH prophylaxis. (Ononge et al., 2016). According to Maya and his follows showed that maternal mortality is, in most cases preventable. For this reason, 99% of maternal mortality cases occur in developing countries. In Tanzania mainland maternal mortality remain staggeringly high. In Zanzibar maternal mortality decrease in the past several years, but the current rate 287 per 100,000 deaths. Lack of equipment such as delivery sets, Blood Pressure and Ultrasound machines. Shortage of drugs which Treat anaemia and Blood Pressure and staffs. PPH treated with oxytocin and mesoprostol (Maya et al. 2013.)

Summary:

As we have seen from different studies conducted in different countries. There is difference between developed and developing countries in the aspect of maternal mortality are higher in developing countries as compared to developed countries due to different causes such as PPH, Eclampsia, Anaemia and so on. Although PPH is preventable but still caused high number of death in developing countries

1.3 Problem statement:

Post-partum haemorrhage is a one among big problem which lead to maternal death in developing countries such as Tanzania. The overall worldwide prevalence rate approximately 6 - 11% (Lockhart, 2015). According to WHO (2009) PPH is the primary cause of nearly one quarter of all maternal death global. About 0.4 women per 100,000 delivering women dies from PPH in the United Kingdom. Africa has high about 10.5%, about 150 women per 100,000 deliveries die in Sub-Saharan Africa. The most consequences of PPH are Hypovolemic shock followed with anaemia and shock. Also PPH has a lot of effect to the family and society such as to reduce the productivities and lack of mother's love for the children who lose their important person of their family (mother). not only that but also government's income reduce also energy work of the nation decrease (Umashankar et al., 2013). In Tanzania PPH causes 25-28% of all maternal death, due to uterine atony account for more than 75% (TDHS, 2010). In Zanzibar maternal deaths caused by postpartum haemorrhage and antepartum haemorrhage was 44% in 2013. The current rate of PPH is 287 per 100,000 (Maya et al., 2013). Despite the maternal mortality reduced at Tanzania Zanzibar by using different interventions still we didn't reach the Millennium Development Goal number five (MDG5) target and the gap remain high to reach the target of sever burden of PPH few studies have done to examine the knowledge of health workers in order to prevent and manage PPH in Tanzania Zanzibar. This study will help to know why there is high maternal death at referring hospital (MOH, 2015). While the government done a lot of interventions in order to reduce maternal mortality rate.

Although there are previous international and national effort to reduce PPH, there is still alarming number of cases particularly in Africa. Africa has been reported to lack equipment, manpower and training (in some areas) and this is said to escalate PPH and maternal mortality. Observing these figures and facts, the researcher was interested in finding out whether or not the midwives are knowledgeable on what to do and whether there are barriers to prevent and manage PPH accordingly. There was no published literature on the knowledge and practice of nurses as far as PPH is concerned in Zanzibar. In this state, one wouldn't know what can be done to reduce PPH in Zanzibar.

1.4 Justification of the problem:

This study with attempted to address the knowledge gap by providing the information on the level of knowledge among maternity health workers on prevention and management of PPH among the mother who deliver. The results will help to contribute in improving the knowledge and awareness of health workers, about the drugs of choice for prevention, management and treatment of PPH. Also may be used by the government to plan the strong policies in order to reduce PPH. It can also be used by the Ministry of Health to identify areas of weakness and plan informed rectifications. Obstetric Unit at Mnazi Mmoja will be able to get feedback as to what is affecting their performance in this regard and plan for change of the issues that are within their reach.

1.5 Study Question:

How is the knowledge and practice of midwives on prevention and management of post-partum haemorrhage?

2. OBJECTIVES

2.1 Broad objectives:

To explore the knowledge among nurse midwives on prevention and management of post partum haemorrhage at maternity ward, Mnazi Mmoja hospital Zanzibar

2.2 Specific objectives:

- 1) To assess the knowledge among nurses midwives on risks for PPH.
- 2) To explore knowledge among nurse midwives on management of PPH
- 3) To assess the procedures and strategies used by midwives in response to PPH occurrence

3. METHODOLOGY

3.1 Study design and time:

The study design was cross sectional qualitative hospital based study on knowledge on prevention and management of PPH. The study was carried out in 2017. Cross sectional design was selected because of the given short period of data collection and that it required fewer resources. The qualitative approach was considered ideal for this study because it was about midwives experiences in dealing with PPH and this would differ from one person to another. Qualitative approach was used also because PPH experiences had never been documented particularly from Mnazi Mmoja Hospital.

3.2 Study area:

The study was conducted at Maternity ward, Mnazi Mmoja, Referral Hospital. This is referral hospital in Zanzibar town, Urban/West region. For Zanzibar, Mnazi Mmoja is the biggest hospital and it is government owned. The hospital has Paediatric, Gynaecology, Maternity, Internal medicine (Gastrology, Cardiology, Pulmonology, Nephrology) Surgical, Dermatology, Dental, Intensive Care Unit, HIV, Leprosy wards. Also Neurosurgery, Acupuncture, Emergency services, Physiotherapy, Occupational therapy, Pharmacy, ENT department and OPD department. Altogether, the hospital has a bed capacity of 440.

Mnazi Mmoja maternity ward is divided into antenatal and post-natal wards, labour ward and labour theatre. Together, the maternity ward has bed capacity 52 and 42 health workers among whom are; Consultant Obstetricians, Gynaecologists, Nurse Midwives, and Medical officers. Approximately 88,068 deliveries are conducted per year in this ward.

3.3 Study population:

The study population were all nurse midwives at maternity ward, Mnazi Mmoja hospital Zanzibar. The maternity ward has a total of 27 nurse midwives. These nurse midwives monitor and conduct all normal deliveries and provide all care needed for both antenatal, postnatal deliveries and post C/S mothers.

3.3.1 Eligibility Criteria:**Inclusion Criteria:**

All nurse midwives of maternity who have worked for at least one year experience within Mnazi Mmoja maternity ward formed the studied population. This period was chosen so that the participant would have gathered substantial experience on PPH in Mnazi Mmoja context.

Exclusion Criteria:

Those nurse midwives who were on holidays and sick leave during the period of data collection were excluded from the study.

3.4 Sample Size:

Sample size was selected based on criteria for inclusion and exclusion. In qualitative study the sample size is normally based on data saturation. Data saturation is reached when no new data is generated during the data collection (Fusch and Ness, 2015). In this study data saturation was reached on the 15th interview giving a sample size of 15 nurse midwives. Investigator chose this sample size according to nature of the study (Qualitative) which requires few persons with good experience of the studied phenomenon.

3.5 Sampling method:

Sampling method was purposive which is one of non-probability sampling methods. Purposive sampling method was used by the researcher to identify potential subjects in research at the area of data collection. Investigator wished to use this method because it groups participants according to pre-selected criteria and it is easier and could be handled within the given short period of time. The sample size was determined on the data saturation point.

3.6 Variables:

Dependent variables

1. Knowledge on PPH
2. Practice on PPH

Independent variables:

This being a qualitative study, the independent variables cannot be identified prior to the study. The variables in qualitative study are the experiences of the studied subjects on the phenomena in discussion.

3.7 Data collection tool:

The tool that the investigator used was an interview guide which contained semi-structured questions. The questions were basically open-ended questions and a tape recorder was used to collect information from respondents because it was directing the researcher where to start. Open-ended questions enabled the respondents to talk freely about the topic on the guide and the probing questions were used for additional information and clarification. It explores issues of the topic and directs the conversation. An interview guide was developed in English only because all respondents understand this language.

3.8 Data collection method:

Before the collection of the study, the participants were informed about the aim of the study and the consent was provided, the participants were assured about confidentiality in handling the findings. The investigator identified the participants from the nurse in charge attendance book by using inclusion criteria. Data collection approaches for qualitative research were employed in which the investigator uses direct interaction with individuals on a one-to-one basis. In-depth interviews to the

maternity nurse midwives maternity ward at MMH to collect the preventive measures and management of PPH. The investigator selected this method because she wanted to get rich information through open ended questions and probing until no new information could come out and non-verbal observations. Investigator collected data using in-depth interview guide in English because all participants understood English language. Interview was conducted in quiet room at maternity ward, for 30 to 45 minutes per interview. All interviews were voice-recorded. After each interview key points were summarized in the presence of interviewee for confirmation and further elaboration where necessary.

Pre-testing:

Before pre-testing respondents was conveniently selected and requested to consent based on inclusion criteria. Permission to conduct pre-testing was sought from the concerned authority. Pre-test of interview guide was done to the few nurse midwives at MuembeLadu maternity hospital Zanzibar prior to data collection at the study area because it has similar characteristics to the study population that was included in the main study. To test if the tools for data collection and method are validity and research questions are relevant to the respondents, and exposed whether the findings in it would answer the research questions and achieve the objectives of the study and if not, appropriate changes was done before the major study.

3.9 Data analysis:

Qualitative Data analysis is a process of fitting data together, make the invisible obvious and linking and attributing consequences to antecedents (Baxter and Jack, 2008). The purposes being organise, provide structure to, and elicit meaning from the data using the following steps: the narratives were transferred from audiotape into written information, the transcripts were read and reread through meaningful segments and units were noted and collection sheet was checked for completeness and if correctly filled in were stored well. All recorded interviews were transcribed per verbatim. The transcripts were coded by using different colors in Microsoft Word computer program. Codes were assembled in small meaning units and these units were later gathered (depending on their relationship to each other) to create categories which are the results for this study.

3.10 Ethical considerations:

In fulfilling ethical issues, the proposal was submitted to the ZU to request for ethical clearance before undertaking the study. The ethical clearance was granted by University Research Ethical Committee and letter for conducting the study was obtained from the University (FoHAS) Department of Nursing. The permission letter and proposal were submitted to the Mnazi Mmoja Hospital Director for approval of conducting the research and it was forwarded to research board within the hospital. The Head of Maternity ward was informed about the study verbally upon receiving permission letter from the hospital research board.

Nurse midwives at maternity Mnazi Mmoja Hospital were informed about the study, had their questions answered and signed consent form upon agreeing to participate. The study participants' identities were preserved in that the researcher avoided using their names on the data collection sheets and during transcription. This was a voluntary study and the participants were informed of their right to withdraw from the study at any point without consequences or intimidation. The information obtained was used for the purpose of research only.

3.11 Dissemination of results:

Upon completion of this study, results will disseminated to the following: Ministry of health Zanzibar, departments at MM Hospital, Maternity department at M M Hospital. Zanzibar University Library, The head, MM Referral Hospital. And will be presented in clinical conference at ZU.

Not only that but also the information's and the results of this study will be published online and in the African and International Journals to be used by others who may need to know the level of knowledge of nurse midwives on prevention and management of PPH at MM Hospital

4. RESULTS

This chapter contains results following content analysis of the interviews conducted on nurses pertaining to their understanding and actions around PPH. On assembling the codes into meaningful units seven sub-categories were constructed. The categories that were constructed are; PPH as a serious fatal condition, causes of PPH, the risk of PPH, assessment for PPH, management of PPH, PPH as a preventable condition and areas of inconsistency. These categories

were then merged resulting into five themes which are; PPH as a serious situation, Causes and risk for PPH, assessment and management of PPH, preparedness as prevention of PPH and areas of inconsistency. The results for this project are based on these themes.

4.1 Participant's sociodemographic characteristics:

Socio demographic information of participants were gathered from each participant prior to interview. for the interview.sex, age, marital status, level of education, occupational, working experience and receive any training of post partum hemorrhage (PPH) and are presented in the table below.

Table 4.1 Socio demographic of participants (N=15)

Participant Number	Sex	Age (Years)	Level Of Education	Cadre	Working Experience	Training on PPH
01	Female	30	Diploma	Nurse midwife	4years	No
02	Female	38	Degree	Nurse midwife	3years	No
03	Female	27	Diploma	Nurse midwife	2years	No
04	Female	32	Diploma	Nurse midwife	5years	AMTSL
05	Female	31	Degree	Nurse midwife	3years	ALSO
06	Female	33	Degree	Nurse midwife	5years	ALSO
07	Female	30	Diploma	Nurse midwife	3years	No
08	Female	28	Diploma	Nurse midwife	4years	No
09	Female	29	Diploma	Nurse midwife	3years	No
10	Female	30	Diploma	Nurse midwife	2years	ALSO
11	Female	32	Degree	Nurse midwife	4years	AMTSL
12	Female	28	Diploma	Nurse midwife	1year	AMTSL
13	Female	35	Degree	Nurse midwife	5years	No
14	Female	30	Diploma	Nurse midwife	4years	AMTSL
15	Female	30	Diploma	Nurse midwife	3years	ALSO

4.2 PPH as a serious fatal condition:

From the tone and the spoken words of all participants, PPH seen to be taken with due weight. Firstly it is stressed that when there is PPH, the first witness should shout to all who are nearby so as to quickly form a team as one of them said:

"if you have seen it is PPH you must Call for help, inform the doctor, give the mother more injection Oxytocin, uterine massage, catheterization and look the causes and take actions"

And with a more alarming tone, another one says;

"First of all I will shout "HELP, HELP, HELP" Immediately I will open mother's vein, 500ml drip of Ringer lactate with 20 I U oxytocin and assessment of 4T's"

Secondly, all nurses recognized PPH as the leading cause of maternal death in the center which further explains why they take it so seriously. One of the nurses who spoke of maternal mortality said:

"PPH is the most cause of maternal death so should be prevented. Mother should be advice to deliver their baby at least for the interval of 2 years, to increase the medicines, workers and Emergency equipment at maternity wards"

Further indication that PPH requires special attention, most of the nurses had undergone certain form of training to prepare them for this condition. Some had undertaken a training in Active Management of third stage of labor (AMTL) while others reported to have been through Advanced Life Support in Obstetrics (ALSO) but still obstetric deaths due to PPH are still registered as one of them indicated:

"PPH is most killing factors in maternity ward, so everyone has responsibility in order...Stop maternal death caused by PPH, all health care providers should work together"

Another one says there must be information passed to the mother pertaining to the pre natal risks. Here she mentions one of the risk as she says:

“PPH is the most cause of maternal death so should be prevented. Mother should be advice to deliver their baby at least for the interval of 2 year”

4.3 Causes and risk for PPH:

The majority of participants indicated that they know what causes PPH as they responded to the questions on their understanding on this condition. One of the cause that was clearly stated was birth trauma. This trauma was described using words such as genital laceration, placenta abruption, tear of perineum, uterine rupture, tear of cervix, and trauma to the vagina. One of the participants enlists:

“... cause of PPH which occurs in high number Trauma this occurs when the mother gets tear (injury) of cervix, uterus, vagina or Perineum, Tissue this occurs when some products of placenta retained such as membranes”

They indicated that they know various procedures and means through which trauma during delivery could occur such as episiotomy and suction extraction as reported by one of the nurses:

“It happens to a mother who delivers her baby by helping with forceps or vacuum (assisted delivery)...women who deliver by labor induction, and women with placenta abruption or placenta previa”

Apart from trauma, other causes were also mentioned and some of them could be regarded as the consequence of bleeding. These other causes were clotting disorder, uterine atone, (coagulopathy) and retained materials in the placenta such as retained blood clot and retention of other tissues. One of the nurses' report:

“There are othercauses such as tone... fail of uterus to contract, trauma: tears/ cuts, tissue: retained membranes or other placenta products and thrombin but also...clotting disorders”

Concerning risk for PPH, the participants registered various risk which could be grouped into prenatal and ante natal risks. The mentioned prenatal risks were such as, maternal age of above 40 years, having anemia during pregnancy, gestational hypertension, pre delivery infection, multiparty and obesity. Like the majority, one of the nurses mentions them as:

“The risk could be Mother who delivers big baby Pregnant woman with infections, women who has prolonged labor, , previous history of post-partum hemorrhage, and obesity”

The antenatal risk for PPH were named so during analysis from the fact that these depends on the procedure of delivery and acts of those assisting in this process. For example, undergoing episiotomy forceps delivery and vacuum extraction were mentioned as a risky procedures for PPH as one of the participate narrates:

“...women with the following are at risk to get Post partum hemorrhage, these are gestation, Hypertension, women deliver by selective cesarean section, age > 40 years and mother and who has given episiotomy during delivery”

Other antenatal risks were such as delivery of a big or twin babies, prolonged labor and selective caesarian section. Two participants puts the risks in this way:

“Mother with multiple pregnancies, mother with big baby, anemic mother, mother with, previous history of PPH, mother with pre- eclampsia or with eclampsia mother with prolonged labor, mother who deliver by C Section and mother who get antepartum hemorrhage”

4.4 Assessment and management monitoring PPH:

All participants indicated that they know assessment of PPH in which they indicated that they look at amount of blood loss if it is more than 500ml, presence of trauma, low tone the tone, tissue retention, thrombin and through monitoring of the vital signs especially the blood pressure. Uterine massage is recommended as a technique to assess tone for a mother after delivery:

“I will call for help to the nurse midwives, doctors and others members of the hospital team,...Investigation such as grouping and X-Matching and Hemoglobin (HB) level, stop bleeding...By given the mother I/V ringer lactate with 20 I.U inj Oxytocin, uterine massage and assess the causes and take actions”

On the management aspect, all participants indicated that a quick action needs to be taken. The majority of participants recommends a team approach whenever there is an incident of PPH. First they would puncture a vein and infiltrate with ringer lactate. There will also be administration of oxytocin (some would give 10 IU while others 20 IU). Another medication is as mentioned by one of the nurses:

“Call for help at least four (4) people, uterine massage, open vein take blood for grouping and X- Matching, catheterization, I/V Oxytocin and misoprostol per rectum given look for the cause and take action”

“Puncturing the vein” seems to be a very important and quick action that the majority will do to allow for ringer lactate infiltration and or blood transfusion. Uterine massage is reported by all participants as a way of managing PPH but also catheterization by few. Thereafter, a close follow up of the patient while monitoring vital signs is recommended for all as one of the nurses insist:

“Observation of the mother before and after delivery, admitted the mother at least for 24hours In order to assess her condition and check vital signs of the mother before and after delivery”

In a situation where bleeding control is failing or patient’s vital signs deteriorating due to complexity, a doctor is to be called immediately as seen in the explanation of one of the participants:

“Call for help, inform the doctor, give the mother more inj Oxytocin, uterine massage catheterization and look the causes and take actions”

4.5 PPH can be prevented and maternal death reduced:

In broader terms, the majority of the participants believes that PPH can be prevented or handled if work is done efficiently. Efficiency in this regard depends on presence and availability of organized team of professionals and appropriate equipment and medication such as oxytocin and misoprostol. One of them considers that availability of hypertensives is also important as she discloses:

“Post partum hemorrhage is preventable if there enough medicines (such as anti-Hypertensive, Oxytocin and misoprostol) staff nurse midwives, doctors and anesthetics”

The participants were asked what they could do to prevent PPH from occurring. Some indicated that prevention is possible if risk factors are alleviated/avoided. One of the commonly advised means to avoid PPH was to avoid trauma as much as possible. One way that was advised by one of the nurses is to avoid episiotomy in the first place. The nurses believes that episiotomy should be done only if it must be and the stitching done very carefully.

I will prevent her by providing injection Oxytocin after delivery of the baby, avoid episiotomy if possible....if there is no need. Also I will do AMTSL soon after delivery of placenta, and provide....and Misoprostol by rectum

Another one suggests prevention may not be possible but at least the preparedness and acting immediately and accordingly will eventually reduce the bleeding. She also says that one has to take precautions depending on which procedure was conducted for some of them are a risk. She explains

“I will prevent the women as follow, to provide close observation for the mother given Induction of labor, mother who given episiotomy should be stitch well after delivery, Empty bladder, assess uterine tone...if there is contraction...after delivery and if the mother Deliver by C section should be given injection Oxytocin in I/V ringer lactate”

It was clear in the explanations by the nurses that the occurrence of PPH is something that is next to impossible. However, they all were of the opinion that things could be done to “have a control” over the situation and reduce the bleeding. One of them mentioned array of things that can be done during this incident as she says:

“I will prevent her if she is anemic I will give her iron supplementation and advice her to use this drug until she delivers, also to advice the mother to do ultra sound in order to known lying/attaching position of placenta, during labor I will empty the mother bladder. If Has vaginal birth I will give injection Oxytocin 10 I.U, I/M to reduce blood loss, also I will Examine for tears and repair it, if she had C/S Oxytocin will be given through injection and In the drip in her vein”

5. DISCUSSION

This is a chapter contains discussion of the constructed categories in the view of available literature. In general terms the knowledge about PPH among nurses is substantially good but the main issues are the necessities to deal with emergency moment such as manpower and necessary medication and equipment. The study report by Maya and colleagues enlists sufficient staff and delivery sets, blood pressure and ultrasound machines and medications especially oxytocin and misoprostol as the missing necessities to deal with PPH (Maya et al. 2013) in Zanzibar.

Participants in this study were optimistic that PPH can be prevented and where failure fails the bleeding can be handled within short time. They mentioned that oxytocin and misoprostol were prerequisites for this achievement. This is in line with guidelines of the world health organization which recommends Oxytocin (IM/IV, 10 IU) or misoprostol are recommended as alternatives for prevention of PPH (WHO 2009; WHO 2012). In Australia, using misoprostol in the community reduced PPH significantly (Lang, Zhao and Robertson, 2015). Although oxytocin or misoprostol are globally recommended and used (Dahlke et al., 2015) different findings are reported from USA where they use non drug intervention (control cord traction and clamping) and uterotonic by using a skilled health care workers (Bell, 2013). The latter is a more advanced technique whose demands may not be met by Zanzibar setting at the moment. Still, controlled cord traction has been reported to be conducted by 86.4% of healthcare providers in Kenya (Mutete 2015) which suggests that this can be possible in Zanzibar as well. As it has been observed, the option of which method and drug to use is normally based on the available resources, management techniques and expertise of the given setting (Johnson et al., 2012).

Midwives in this study also mentioned that monitoring the vital signs of the woman during and after delivery is another important way to identify and deal with any change immediately. This is as was reported in Brazil where it was found that checking vital signs frequently helps in identification of danger signs including PPH (El-sabaa, Oweedah and Alhazmi, 2015).

In this study, PPH is taken as a serious situation by the majority of the nurses. This reflects the report by the international confederation of gynecology and obstetrics that East Africa is one of the region where nurses are normally trained to face PPH preparedly (FIGO, 2017). Furthermore this can be taken as a response to the recommendations by the world health organization that all who offer obstetric service should regard PPH as an emergency (WHO, 2012). Furthermore, this is a good indication that the nurses are actively ready to act in stage three of labor knowing that a dangerous event may occur (Parreira & Gomes, 2013). However in Uganda a study that involved traditional birth attendants and mothers who had just delivered indicated that PPH was perceived as a normal cleaning process (Ononge, 2016). This means that where obstetric health education is not offered PPH may not be taken with its due weight and that will clearly endanger the life of the delivering mother.

All participants of this study knew causes and risk for PPH and were of the opinion that risky procedures such as episiotomy should be done only when critical situation is faced. There have been other studies that report good knowledge on PPH among midwives such as in Brazil (Oyetunde and Nkwonta, 2015). Similarly in Sudan, a reasonable good number of nurse midwives had shown good level of knowledge on definition, types, causes, risk factors and management of PPH (Faidha, 2015). These similarities can indicate that these two settings are following same guidelines for prevention and management of PPH by the World health organization or the nurse midwives could have had same training on obstetric care as in this setting. For example, in this study four nurses were trained in advanced life support in obstetrics (ALSO) and four in active management of third stage of labour (AMTSL) and these might have trained their fellows. In Sudan it was 30% of the midwives who had received in service training about PPH but it was found that 78% had good knowledge about PPH (Faidha, 2015). Comparing the number of those who were trained on PPH (just few) and the number which demonstrated good knowledge (the majority) it means training few potential nurse midwives on ALSO and or AMTSL may have a rippling effect and spread this knowledge to many more. These are very important training packages that have been proved to increase knowledge, skills and preparedness to nurse midwives hence reduce PPH and maternal mortality. For example in Angola, a comparison study showed that training nurse midwives on AMTSL reduced PPH (> or =1000 ml) from 7.5 to 1% (Strand et al., 2005).

Causes that were reported in this study such as Uterine atony, cervical and vaginal tear, morbidity adherent placenta and placenta previa had also been as major causes of PPH in a study that was conducted in India (Edhi *et al.*, 2013). Based on

the fact that most of the African setting are reported to follow the (WHO, 2012) guideline, these findings indicates that India and Africa are more or less on the same line of WHO guideline adherence.

Although this study findings address episiotomy as a risk for PPH, as also shown in other studies (Sosa et al., 2010;) this was different from one setting in Vietnam where nurses and clinicians had witnessed up to 86% episiotomy and thought it was right to continue perform this procedure (Trinh et al., 2015). It could be that the nurse midwives in Vietnam had not been trained on the risk factors to PPH as compared to this setting in Zanzibar.

Following table 1 of the result section of this study, almost 50% of the involved midwives had never had ALSO or AMTSL. Similarly in Sudan In Sudan it was revealed that , participants had long experience varied from 11 to 30 years but only 30% of them received in service training about PPH. This draws a need for local or national strategies to run on service trainings within or away from work place for better outcome on PPH management.

5. CONCLUSION

There substantially good knowledge among midwives concerning risk factors, prevention, and monitoring a PPH event. However there are insufficient staff (to form a team) and necessary equipment to handle an event of PPH.

6. RECOMMENDATIONS

Based on the results of this study, it is recommended that more nurses are added in the obstetric section in order to form the proposed team for emergency such as PPH. Half of the interviewed midwives had been to neither ALSO nor AMSTL training. It is recommended that they are enabled to pursue one or both of these courses so that they are abreast with evidence based practice in PPH risk factors, prevention and management..

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