MOYO DOPPLER VERSUS PINARD FETAL SCOPE: MIDWIVES' EXPERIENCE ON FETAL HEART RATE MONITORING DURING LABOR AT MUHIMBILI NATIONAL HOSPITAL, TANZANIA

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By

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health Allied Sciences a dissertation entitled ***Moyo Doppler versus Pinard fetoscope: Midwives' experience on fetal heart rate monitoring during labor at Muhimbili National Hospital, Tanzania*** in (Partial) fulfillment of the requirements for the degree of Master of Sciences in (Midwifery and Women's Health) of the Muhimbili University of Health and Allied Sciences.

_____

Dr. Sebalda Leshabari

(Supervisor)

_____

Date

DECLARATION ANDCOPYRIGHT

I, **Mary Maurice Mtaki** declare that this **dissertation** is my original work and that it has not been presented and will not be presented to any other University for a similar or another degree award.

Signature …….. Date……

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My appreciation goes to management of Muhimbili National Hospital for giving permission to conduct my study. Special thanks go to all participants from MNH labor ward.

Last but not least, I am expressing my gratitude's to my fellow students for their support, and my research facilitators Dr. Kohi and Dr. Mbekenga for introducing me into the world of research.

DEDICATION

I dedicate this work to my beloved parents, the late Maurice Nkomolla and the late Noves Nkomolla who provided me with a good education foundation which brought me to where I am today. My husband Samson Mtakiand daughters Stella and Asinath for their moral support was very vital for me to accomplish this work.

SUMMARY

Background: Fetal heart monitoring using Pinard fetoscope is the common midwifery experience. However Moyo Doppler has been currently introduced at Muhimbili National hospital (MNH) to replace the former device, since fetal heart monitoring during labor is a vital experience , poor fetal heart rate monitoring during labor is directly associated with over 40% of perinatal deaths. Since the new device was introduced, midwives' experiences on using the device are not well known.

Aim: To explore midwives' experience on utilization, preference and challenges, between Moyo Doppler and Pinard fetoscope on fetal heart rate monitoring during labor**.**

Method: This was a descriptive equalitative study which involved in-depth interviews. The Eight (8) in in-depth interviews were conducted with midwives in order to explore their experience on using Moyo and Pinard fetoscope on fetal heart rate monitoring during labor at MNH. The participants for in - depth interviews were registered midwives, and these participants were selected purposively. All interviewees were audio recorded with participants' consents. Data from the in–depth interviews were analyzed using the qualitative content analysis, meaning units from the interview scripts were summarized into condensed meaning units and then coded. The codes were compared based on similarities and differences then sorted into categories; the underling meaning of categories were linked together to create a theme emerged in order to describe midwives experience.

Ethical: The ethical clearance was obtained from MUHAS at the Directorate of Research and Publications prior to conducting the study and the permission to conduct the study was sort from Muhimbili National Hospital Authority. Participation was voluntary.

Findings:

The findings from this study revealed that the participants preferred to use Moyo Doppler than Pinard fetoscope because the Moyo Doppler simplifies work and keeps records of FHR and MPR for 30 minutes, and it also helps the midwives to monitor multiple laboring woman at the same time and it has audible sound which alert the midwives

about the danger sign for immediate intervention. However it reduces the chance of contamination due to its application.

Moreover in this study some challenges facing midwives on using Moyo Doppler over Pinard fetoscope were reported. There was power cut off and insufficient of Moyo device in labor ward.

It was reported that Pinard fetoscope is difficult to use especially for midwives who have problem in hearing, and problem to allocate the back of the fetus especially to the obese and woman with edema also backache due to frequent bending when listening the fetal heart rate. Pinard fetoscope cannot differentiate the FHR and MPR at the same time; it is a task of a midwife to differentiate them.

Conclusion

The study has reveled that most midwives had experience on Moyo Doppler for fetal heart rate monitoring. Most midwives preferred to use Moyo Doppler due to its easier usability, it reduces the work load, produces reliable results and it detects fetal abnormalities early and helps midwives to take action immediately.Furthermore midwives explained that utilization of Pinard fetoscope should not be abandoned.

Recommendation

- Pinard fetoscope should not be abandoned because in case of electricity cut off Pinard fetoscope can be used.
- On-job training on using Moyo Doppler may be conducted to all all midwives who are working at maternity block.
- Muhimbili National Hospital authority may advise the government to ensure that Moyo Doppler can be used in regional and district hospitals because it helps to reduce the work load of the midwives.
- Policy maker may advise to include Moyo Doppler in the midwives training curriculum as Pinard fetoscope.
- Further research may be carried out to all hospital using Moyo Doppler to explore and determine the midwives' experience on using the Moyo Doppler device by using both method qualitative and quantitative approach.

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LIST OF ABBREVIATIONS

CTG	Cardiograph
FHR	Fetal Heart Rate
EFM	Electronic Fetal Movement
FHM	Fetal Heart Movement
HLH	Haydom Lutheran Hospital
IPPM	Intramural Private Experience Muhimbili
ICM	International Confederation of Midwives
IA	Intermittent Auscultation
MoHCDGEC	Ministry of Health, Community Development, Gender, Elders and Children
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Health and Allied Sciences
NHIF	National Health Insurance
SDG	Sustainable Development Goal
W H O	World Health Organization
VS	Versus

DEFINITION OF TERMS

Experience

Familiarity with a skill or field of knowledge acquired over months or years of actual practice and which, probably, has resulted into accuracy of intended goal (River, 2012).

Midwife

A person who meets the ICM Definition of the Midwife who has been educated and trained to proficiency in the ICM Essential Competencies for Basic Midwifery Experience and demonstrates competency in the experience of midwifery, and who is legally permitted to use this title (World Health Organization, 2013).

Pinard fetoscope

Is a horn "trumpet" shape, with the wide end, pressed upon the abdomen of the mother and the other end pressed to the ear of the midwife. The trumpet shape amplifies the faint sound of the fetal heartbeat, allowing it to be readily heard by the midwife and counted out to determine the fetal heart rate. The fetoscope can be made from a multitude of different materials, including but not limited to wood, aluminum, and plastic (Byaruhanga *et al, 2015*).

Moyo Doppler

Is afetal heart monitor and it detects fetal heart rate quickly and reliably also measures maternal heart rate. It requires a power source or repair (Safer birth 2015).

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Fetal heart rate monitoring is used to check fetal well-being during labor. Fetal heart rate monitoring can inform midwife how well the fetus is doing during labor. Fetus's heart rate may be checked continuously (all the time) or intermittently (off and on). Midwife may use a type of fetal scope or an electronic fetal monitor that can also record woman pulse rate (Vedam *at el.*, 2014)

When uterus contracts, the blood flow of the fetus slows down during the contraction. Fetal heart rate monitoring does not tell us for sure that everything is okay, but if fetus is not getting enough oxygen, the fetal heart rate will show certain patterns that midwife watch for. Intermittent Fetal Heart Rate Monitoring, fetal scope is used to listen to the fetus heart rate for every 5 to 30 minutes. Midwife listens while the woman is having a contraction and for a short time after the contraction ends (Vedam *at el*., 2014)
It is estimated world widely, that 44% of all child deaths under 5years occurs in neonatal stage less than28 days. Intrapartum-related birth asphyxia results in 660,000 neonatal deaths per year and in additional 414,000 children live with disabilities. Intrapartum stillbirths around 1.02 million almost occur in developing countries like Tanzania (Byaruhanga *et al.,* 2015).In Tanzania neonatal mortality rate is 19 deaths per 1000 live births (WHO 2015).

To prevent Intrapartum asphyxia one need to detect early the fetal responses to fetal hypoxemia. In high-income countries, they use high technology to monitor FHR which is not available in low-income countries. In low-income countries like Tanzania intermittent FHR monitoring using Pinard fetoscope is the only main mode of monitoring fetal heart rate during labor.

Intermittent auscultation of FHR during labor is regarded as a safe and effective method of fetal monitoring in low-risk pregnancies (Feinstein & Trepaniq, 2000,Albers, 2012). A study done by Langli at Haydom Lutheran Hospital (HLH) described the relationship

between intermittent auscultation of FHR using a standard Pinard fetoscope and perinatal outcome found that the detection of absent or abnormal FHR was associated with FSB or birth asphyxia with increased need for neonatal resuscitation (Langli *et al*, 2012).

Moyo Doppler fetal heart rate monitor was introduced at Muhimbili labor ward by Laerdal Global Health in August 2015. Moyo Doppler is made for intermittent and continues fetal heart rate monitoring in developing countries setting. This device is simple to use and identifies fetal heart rate quickly and gives the correct findings. Moyo can be placed on the mother's abdomen for continuous monitoring and provide an alarm when the problem is identified.

Furthermore, it helps midwives to provide correct care and helps to reduce the workload without interfering with routine care (Safer Birth, 2014). More over to increase FHR reliability on detecting FHR, Moyo measures maternal heart rate at the same time it measures fetal heart rate. It is cheap, continuous fetal heart rate monitor but requires a power source or repair (Safer birth 2014). A study done by Mohamed and colleagues in 1994 found that decelerations of the fetal heart rate in labor were more reliably with a Doppler ultrasound monitor than with Pinard fetoscope (Mohamed *et al*, 1994)

1.2 Problem statement

Fetal heart monitoring is a very important procedure during labor to ensure fetal well-being. Significant reduction of newborns death was achieved through proper fetal heart rate monitoring (Stankunas, 2010). Ministry of Health Community Development, Gender, Elders and Children (MoHCDGEC) and Sustainable Development Goal (SDG) number 3, Good health and wellbeing 2015-2030 has put much emphasis on reducing perinatal and neonatal mortality. In addition, Byaruhanga and colleagues (2015) emphasized proper fetal heart monitoring during labor as an effective approach to augment efforts of reducing the number of newborns deaths and morbidity.

Inappropriate fetal heart rate monitoring causes perinatal and newborn asphyxia, morbidity and mortality. Furthermore, asphyxiated neonates affect the short and long – term lives of the family and the community as well (Stankunas, 2010). A study done on perinatal audit at Muhimbili National Hospital revealed that, poor fetal heart monitoring

during labor is directly associated with over 40% of perinatal deaths (Kidanto *et al.*, 2009). When fetus experience asphyxia at birth which may cause the chance of negligence, which may related to improper fetal monitoring due to failure of midwife to identify the maternal pulse rate against the fetal heart rate, failure of the fetal monitoring device itself, and midwives, inappropriate read the fetal monitoring device, delay in taking right action when there are signs of fetal distress.

Proper use of different fetal heart monitoring device greatly helps in improving FHR monitoring and therefore decreases unnecessary resuscitation due to asphyxia and still birth (Kidanto *et al.*, 2009).Before August 2015 Pinard fetoscope was the predominant device in use for fetal heart rate monitoring at Muhimbili National Hospital labor ward. MNH introduced Moyo Doppler in August 2015. Unlike the non-electronic trumpet shaped Pinard fetoscope, Moyo Doppler is an automated electronic fetal heart monitoring device**.** Moyo fetal monitor allows woman to move around freely while the women are in labor. The woman can walk, shower, or bathe as much as she wants. The woman can move into any position that is comfortable, which can help her cope with the pain of labor better(Safer birth 2015).The midwives experience on using Moyo Doppler is not well known to some of the midwives, because the device is newly introduced. In our knowledge so far there is no published work which has explored midwives' experience regarding Moyo Doppler and Pinard fetoscope as devices for fetal heart monitoring. Therefore, this study intends to bridge the gap concerning midwives utilization, preference and challenges between Moyo Doppler and Pinard fetoscope on fetal heart rate monitoring during labor.

1.3 Significance of the study

Understanding midwives' experience towards use of either Moyo fetal heart monitor or Pinard fetoscope, will lead to accurate fetal heart rate monitoring, This study gave information on the current midwifery experiences regarding fetal heart monitoring using Moyo and Pinard fetoscope.

The information obtained from this study will inform the practitioners and health policy-makers to encourage good management in the healthcare system to improve quality of care during labor. Also, the study will inform practice to improve FHR monitoring during

labor hence to reduce newborn death. In addition, the findings from this study can provide baseline information for further studies on the midwives' experience on using Moyo Doppler and Pinard fetoscope on fetal heart rate.

1.4 Research questions

1. What is midwives' utilization on using Moyo Doppler versus Pinard fetoscope for fetal heart monitoring during labor?
2. Whatis the midwives preference on using Moyo Doppler versus Pinard fetoscope for fetal heart rate monitoring during labor?
3. What are the challenges facing by midwives on using Moyo Doppler versus Pinard fetoscope on fetal heart rate monitoring during labor?

1.5 Objectives

1.5.1 Broad Objective

The broad objective of this study was to explore midwives' experience on using Moyo Doppler and Pinard fetoscope on fetal heart monitoring during labour.

1.5.2 Specific objectives

1. To explore midwives perspective on utilization of Moyo Doppler versus Pinard fetoscope on fetal heart rate monitoring during labor.
2. To describe midwives preferences on using Moyo Doppler and Pinards fetoscope on fetal heart rate monitoring during labor.
3. To describe challenges facing midwives on using Moyo Doppler and Pinard fetoscope on fetal heart rate monitoring during labor.

1.6 Conceptual framework



Figure 1: Conceptual framework

Conceptual framework illustrated shows how the perspective experience of midwives on using Moyo Doppler and Pinard fetoscope on FHR monitoring.

1.6.1Description of Conceptual framework

This study was guided by the conceptual framework designed by a researcher as a blue print to understand Moyo Doppler versus Pinard fetoscope: Midwives' experience on fetal heart rate monitoring during labor and the use of the new device which influence midwives practice.

The midwives way of thinking reflects his or her action therefore for this reason it is important to understand midwives' experience on fetal heart rate monitoring during labor using either Moyo Doppler device or Pinard fetoscope. This practice is built up by knowledge, and skills (Ajzen, 2002, Davis, 1989).

The way midwives understood and accept either Moyo Doppler or Pinard fetoscope on fetal heart rate monitoring and interpreting the findings is very important this helps to know the status of the fetus. Domidwives understand it? Do they know how to use the devices? Do they perceive the devices to be easy or difficult to use? Do they perceive fetal heart rate monitoring using Moyo Doppler or Pinard fetoscope during labor to be important? In turn this experience builds a positive or negative attitude on acceptance of Moyo Doppler device and Pinard fetoscope (Ajzen, 1991).

Understanding the use of devices facilitates to accept or not to accept to use the devices. Midwives preferences to use Moyo Doppler or Pinard fetoscope in obstetric setting is often influenced by familiarity, opinions, and how midwives perceived to utilize the devices.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews different literatures relating to the topic under the study. The chapter starts with the theoretical literature review, which describes key concepts and theories empirical literature review on selected empirical studies that address the specific research objectives and questions.

Intrapartum-related fresh stillbirth and perinatal asphyxia are still high in low resource settings (Smith *et al*.,2012). It has been estimated that in low-resource settings almost half of stillbirth occur during or around the time of delivery and nearly 75% of neonatal deaths take place within the first few days following birth (Saleem *et al*., 2014).

Worldwide it is estimated that 44% of all child deaths under 5years occurs in neonatal stage less than 28 days. That is the largest cause of neonatal mortality Intrapartum-related birth asphyxia resulting 660000 neonatal deaths per year. Additional 414000 children live with disabilities.

2.2 Experience on using the devices on fetal heart rate monitoring during labor..

A Study done by Maude said that Pinard fetoscope auscultation is a fundamental midwifery skill on fetal heart monitoring. Also requires effective communication as well as the ability to listening carefully, counting the sound and interpret what is heard (Robyn, 2012). In developing countries intermittent FHR monitoring using Pinard fetoscope is the only main way of monitoring fetal heart rate during labor (Robyn, 2012).

Several studies done by Albers, Feinstein & Trepaniq, (2000, 2012), revealed that intermittent auscultation of FHR during labor is regarded as the secure and successful method of fetal monitoring in low-risk pregnancies.

The abnormalities of the fetal heart rate in labor were detected more time after time with a Doppler ultrasound monitor than with a fetal stethoscope (Mohamed *et al.,* 1994). A study done at Haydom Lutheran Hospital (HLH) described the association between

intermittent auscultation of FHR using a standard Pinard fetoscope and perinatal outcome. In this study, found that the detection of not present or abnormal FHR was connected with FSB or birth asphyxia with enlarged need of neonatal resuscitation (Langli e*t al*., 2012).

Continuous fetal monitoring introduced to identify those fetuses that are in high risk and fetal distress during labor and this fetus should be monitored closely (Smith et al., 2012) . Moreover, Continuous electronic fetal heart monitoring aims at improving fetal outcome and minimizing unnecessary obstetrics complications (Smith *et al.,* 2012).

Despite the many types of research carried out on comparative effects of electronic fetal monitoring and intermittent auscultation, careful consideration of the midwives views is required as part of the process to ensure the implementation of evidence-based care appropriate experiences change in FHR monitoring during labor(Smith *et al.,* 2012).

Moreover the study done by Mwenyekonde, (2012) revealed that improving midwives in recognition of fetus problem during labour is a very important aspect (Mwenyekonde, 2012).

On another hand during the Intrapartum period emphasis should be made on how midwives identifies and early detection of complication and immediate action should be taken (Mpembeni, 2014).
A practical lesson on how to monitor fetal well-being, how to interpret observations and record findings are most important, gives guidance on what to do when something is going wrong (Byaruhanga *et al*., 2015).

Furthermore, the Doppler Ultrasound Fetal Heart Rate Monitor is more accurate than the Pinard fetoscope in determining the FHR both before and after uterine contractions in low-risk pregnancies in the active phase of the first stage of labor(Chinula, 2013).

2.3 Preference of the devices on fetal heart rate monitoring during labor

A study done by Albers (2012) said that midwives uses electronic fetal monitoring at the initial assessment which is effective in improving neonatal outcomes in health women with uncomplicated pregnancy (Albers, 2012).

Furthermore women with no risk factors for fetal hypoxia in normal labor, Pinard fetoscope is the device of choice and depends the progress of labor although in other setting there is no choice (Chandraharan,2010).

Discussion Published by the Association of Radical Midwives said that some midwives confidently believe that the Pinard fetoscope is a tool that is vital in assessment of fetal wellbeing although they concluded that it is difficult to use (Godwin,2000).

Several studies done by Feinstein & Trepaniq andAlbers (2000; 2012) said that intermittent auscultation of FHR during labor is regarded as a safe and effective method of fetal heart monitoring in low-risk pregnancies.

A study done by Byaruhanga and colleagues (2015) said that Pinard fetoscope uses much more time to accurately locate the fetal heart, as the fetal heart is only heard within a very narrow area of the woman's abdomen. Moreover a study done on midwives experience on the use of technology revealed that midwives who trusted the electronic fetal monitor were few in number (Sinclair & Gardner, 2001).

Care givers preference of Electronic fetal monitor should base on the clinical circumstances at that time and made consultation with the multidisciplinary team. A study carried out at Swiss hospital said that health care providers preferred electronic fetal heart monitor (Malefic *et al,* 2015).For these evidence exploring experience of midwives is very important since it will bring the baseline information in training for the midwives in the entire country for reducing stillbirth associated with asphyxia**.**

2.4 Challenges facing midwives on using the devices

In developing countries 1.2 million infants die in the first month of life and another million infants are stillbirths each year (Kidanto, 2009).

Identifying of abnormalities in fetal heart rate during labor is important for identifying the fetus for appropriate management. Some literature shows that inadequate monitoring and poor interpretation of assessment leads to delays in diagnosis and management of fetal distress (Byaruhanga *et al*,2015).

Electronic fetal monitoring is very common obstetrics interventions. It remains a challenge to review its rates and indications in order to identify areas that need improvement (Saadia, 2015).

A study done at Muhimbili National Hospital revealed that early neonatal and perinatal mortality rates were 124 respectively. Among of that fetus (38%) had no fetal heart beats on admission at MNH labor ward and the majority of the neonatal deaths were asphyxiated? Furthermore, prevention of prenatal deaths is important areas for health care improvements and the standard care during labor and delivery, adequate fetal and maternal monitoring during labor(Kidanto *et al*., 2012).

A study done on prenatal audit at Muhimbili National Hospital, revealed that poor fetal heart monitoring during labor directly is associated with over 40% of perinatal death (Kidanto*at el.*,2009).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Study design

This was a descriptive study which was designed and used qualitative approach so as to achieve the study objectives, whereby in- depth interviews was employed.

3.2 Study Area/setting

The study was conducted at labor ward of the Muhimbili National Hospital in Ilala district, Dar es Salaam city Tanzania; it is a National referral and teaching Hospital. Muhimbili labor ward receives pregnant women with high risk from Regional, District and Private Hospitals.

According to the MNH protocol in labor ward, care of pregnant women during labor is done by registered midwives who are degree holders and Diploma Midwives, along with other health care staffs; those are obstetricians, resident doctors, and registrars, intern doctors, midwives and students. Pregnant women admitted to labor ward were those who are coming to MNH as referral patients and self-referral through health insurance system and also Intramural Private Practice Management (IPPM) pregnant women who are self-referral cared at MNH.

The labor ward has a capacity of 20 beds, receives 30 to 50 pregnant women with high risk per day. And has 30 registered midwives who are working on two shifts that are morning shift and night shift.

Morning shift 12 midwives and night shift 8 midwives are allocated for providing care to those pregnant women. The researcher selected MNH because at Muhimbili labor ward currently midwives are using Moyo Doppler fetal monitor and before that they used a Pinard fetoscope.

3.3 Study population

The study participants were registered midwives employed and working at Muhimbili National Hospital labor ward .In this study the nurse midwives who are working at labor ward are regarded as midwives.

3.4Inclusion criteria

Registered midwives employed by the MNH and working in the labor ward for more than six months and who were willing to participate in the study. Six month and above are enough for the midwives to have experience in labor ward for using both devices (Moyo Doppler and Pinard fetoscope).

3.4.1 Exclusion criteria

Registered midwives who were not providing bedside service to a pregnant woman who are in labor, for example, block manager, and those who were on annual leave and maternity leave.

3.5 Sample size

In the qualitative study (in-depth interview) the number of participants is usually small. Twelve (12) registered midwives were recruited. However, the primary criterion for the sample was saturation of the information. That was where by the researcher began to hear the same information being repeatedly reported and no longer learning anything new (Polit, 2012).

3.6 Sampling procedure

Purposive sampling was used to sample study participants from labor ward at MNH.. The purposive sampling technique was used for the reason that it enabled the researcher to gather in depth information under the study. The researcher requested the in charge of labor ward to help to identify participants who had met inclusion criteria in order to recruit them purposefully. Twelve (12) participants were recruited and the eligible participants were asked to choose their convenient time for the interview. However, only 8 participants were interviewed because data saturation was reached (Polit, 2012).

3.7 Data collection procedure and instrument

3.7.1Interview

In-depth interviews were used to collect primary data on midwives' experience on Moyo Doppler versus Pinard fetoscope on fetal heart rate monitoring. The technique used in interviewing participants was useful as it provided critical understanding of the participants how they used the new device (Moyo Doppler fetal monitor).

During the interview the researcher had a list of open-ended questions on interviews guide, however, the interview guide allowed flexibility and researcher probed for clarification and more explanation. This enabled the researcher to explore factors that made the midwives to use or not to use a certain device in monitoring of FHR. The interview guide was constructed in English language then translated into the Swahili language (Appendix A 1). Information related to the purpose and of the interview was explained to participants and informed written consent which was constructed in English then translated into Swahili language was signed by the participants also they provided oral consent (Appendix A II). The participants were given an opportunity to ask any preliminary questions before the actual interview.

All interviews were conducted in the convenient roomat thein charges' office at labor ward to avoid interruption during interviews session. Each interview lasted for at least 30 – 45 minutes depending on the kind of information that was given by participants. The exercise took ten (10) days successively to be completed.

All interviews were conducted in Swahili language in order to capture in depth information from the participants because Swahili language is a national language and spoken by all Tanzanian.

The audio recorder was used to record the interviews with permission from the participants. Interviews were conducted until saturation was reached. The quality audio clip recorder was used to increase the accuracy of data collection and to ensure the information was captured.

3.8 Research assistant recruitment

One research assistant was recruited and was trained on how to ask questions. Principle investigator took notes and did observation properly especially on non- verbal communication. Research assistant worked with principal investigator during participant's recruitment and venue preparation.

3.9 Prior Knowledge of the Researcher

The researcher had a prior knowledge on care of pregnant woman during labor especially on monitoring of fetal heart rate using both Pinard fetoscope and Moyo Doppler. I being a midwife, had keen interest to improve care of mothers in labor since had an experience on how women suffered due to shortage of staffs, and inappropriate fetal heart rate monitoring to those mothers who are in labor.

But the researcher had to learn on some of the challenges that were happening during the study especially on monitoring of FHR and this required an open mind through the research process. The participants in this study presented different perspectives which elicited great curiosity to better understanding of midwives experience towards using either Pinard fetoscope or Moyo Doppler. This had improved my understanding seeing things in different perspectives from different midwives.

3.10 Data quality control

After each interview the researcher went through the audio recorded information to ensure the quality of information that was recorded before interviewing the next participants. Those unclear questions were corrected so as to enrich the following interviews. The researcher created electronic file whereby all the information that were collected during in-depth interview were kept as a backup to ensure availability of data.

3.11 Data Processing and analysis

On the completion of data collection, the data from the interviews was transcribed and translated into English and was analysed by using qualitative content analysis. Content analysis is one of the several qualitative methods presently available for data and analysing interpreting its meaning (Lundiman & Granehein 2005). The researcher transcribed all the audio recorded information word by word and translated into Kiswahili

to English language, after transcribing the interviews, then researcher read the transcripts several times to understand whole contexts. After reading the transcripts, meaning units were obtained to identify in the relation to the aim of the study.

The meaning units that were extracted from each area of the analysis were then condensed, and from these condensed meaning units, codes and categories were developed (Table 1 showed of coding process) and then combined together to form categories depending of their differences and similarities.

Table 1: Examples of data analysis process

Meaning unity	**Condensed meaning unity**	**Code**	**Category**	**Theme**
This is a good technology because it can keep record of the fetal heart rate, it is not like Pinard whereby you should record immediately after finish to read the monitor but if you forget to record you cannot get it back anymore while Moyo Doppler when you press a button you can get all record.	Moyo keeps record of the FHR as opposed to Pinard that need one to record manually	Moyo preferred over Pinard as it keeps record	Moyo preferred over Pinard as it keeps record	Preferences on utilization

3.12 Trustworthiness

The trustworthiness was ensured using (Graneheim & Lundman, 2004) model of trustworthiness. The researcher created trust and good interpersonal relationship with the participants by greeting and introducing themselves and explained the study aim to the participants thus made midwives feel safe and free to explain their experience. However, documentation of all raw data & from transcript verbally was shared by participants to confirm the accuracy of information provided.

Research findings were trustworthy as possible and every each study was evaluated in relation to the procedures to generate the finding (Graneheim & Lundman, 2004). Purposive selection of participants(midwives) contributed to enrich the findings that were collected.

Dependability refers to possible changes over time in data collection and analysis and the ability of the researcher to account for change (Polit, 2012). In –depth interviews guide sheet was consistent since it provided openness through open-ended questions that were asked.

Conformability refers to how the findings represent or grounded. In this study use of Swahili language in data collection was used to make participants be free to express themselves and being comfortable to interact with the researcher in presenting their feelings. Also, data was translated in actual words from participants (Polit , 2012).

3.13 Pilot study

The pilot study was carried out in ward 35 (maternity ICU) at Muhimbili National Hospital. Draft of interview questions was tested to three midwives before conducting the study. Midwives were informed the purpose of the pilot study. The purpose was to see if the questions were able to answer the research objectives and to ensure all relevant issues are included. Midwives who were included in pretest exercise were not included in the study.

3.14 Ethical Consideration

The researcher obtained ethical clearance from MUHAS at the Directorate of Research and Publications prior to conducting the study. (Appendix D) The permission to conduct the study at MNH was sort from Muhimbili National Hospital Authority. (Appendix E) The participants were informed about the aim of the study and procedures. It was elaborated to participants that participation was voluntary, confidentiality was observed. Participants were clearly informed that they can withdraw from the study at any time. Information on the purpose of the interview was explained to participants and the written consent was sought after participants having understood the information about the benefits and purpose of the study. Participants were assured confidentiality and no names were indicated during the interview instead numbers were used.

3.15 Dissemination Plan

The report of the findings was disseminated to the following areas, one copy to the office of Dean School of Nursing, Director of MUHAS library, Director of Nursing and Midwives MNH, Labor ward and Director of Laerdal Global Health. Also, the study will be published in midwives journal for wider benefit

CHAPTER FOUR

4.0 STUDY FINDINGS

4.1 Introduction

This chapter presents the findings of the study. The first part describes the study participants followed by description of the findings which reflects participant's perspectives of their experience of using Moyo over Pinard fetoscope. The researcher selected similar codes and then brought together into categories and similar categories were grouped into themes Anonymous quotes were used to illustrate the facts so as to give a clear understanding of the findings to the reader.

4.2 Description of the study participants

Eight (8) in- depth interviews were conducted at MNH labor ward. Participant's years ranged from 25 to 50 years with an overall mean age of 38%. The participants who were interviewed in this study had working experience of 1 year to 30 years (Table 2 below).

Table 2: Showing the summary of Socio-demographic characteristics of participants

ID	Gender	Age (years)	Education level	Experience (Years)	Profession
P01	F	39	Diploma	2	Midwife
P02	F	43	Diploma	11	Midwife
P03	F	45	Diploma	5	Midwife
P04	F	25	Diploma	2	Midwife
P05	F	34	Diploma	1	Midwife
P 06	F	31	BScM	9	Midwife
P 07	F	45	Diploma	10	Midwife
P 08	F	50	Diploma	30	Midwife

4.3. Findings from in-depth interview

Three themes emerged during the analysis of the data that revealed participants perspectives on experience of using Moyo over Pinard fetoscope. The themes refers to participants preferences of utilizing Moyo Doppler over Pinard, the usefulness of the Moyo Doppler over Pinards and the challenges of using Moyo over the Pinard. Table3below shows emerged themes with corresponding categories.

Table 3: Category and themes reflecting participants' perspectives on experience of using Moyo fetoscope over Pinard fetoscope

Category	Themes
- Keeping record than Pinard - Moyo Doppler is easier to use than Pinard fetoscope - Reduces work load of midwives - Pinard fetoscope is time consuming	Preferences on utilization of Moyo Doppler
- Moyo alert midwives in case of danger signs - Moyo reduces chance of midwives contamination - Allows midwives to monitor multiple laboring women - Provide quality care compared to Pinard	Usefulness of Moyo Doppler over Pinard fetoscope
- Facilities need alternative power supply in case of power cut off - Insufficient Moyo Doppler for all admitted women - Un trained midwives is difficult to use Moyo Doppler - More delicate, hence need proper handling of device and careful use.	Challenges using Moyo over Pinard

4.3.1 Preferences on utilization of Moyo Doppler

Participants who were interviewed tried to describe their experiences of using Moyo and Pinard fetoscope and the interviews revealed that the midwives preferred to use Moyo Doppler over Pinard fetoscope for a number of reasons as captured in the categories below.

Keeping record than Pinard fetoscope

Midwives preferred to utilize Moyo Doppler due to its quality of recording fetal heart rate. Moyo Doppler facilitates work as it keeps record and finding for 30 minutes and hence it is easy to records the findings and monitors the fetal heart rate and maternal pulse rate. On describing their preference of using Moyo, one participant expressed that:

"……Moyo Doppler has a good technology because it can keep record of the fetal heart rate. It is not like Pinard fetoscope whereby one should record immediately after finishing to monitor fetal heart rate but if I forget to record I cannot get it back anymore while Moyo Doppler when I press the button I get all findings, I prefer Moyo Doppler……"(Participant 6)

Another participant added that:

"..... Generally, I prefer to utilize Moyo Doppler on fetal heart rate monitoring because the device has ability to keep the findings even if the midwife continues with other activities……" (Participant 8).

Another participant said that:

"……I prefer to utilize Moyo Doppler due to easier utilization, when I insert to the mothers abdomen direct to the back of the fetus my task is only to read FHR from the Moyo Doppler monitor and record the findings to the patograph……"(Participant 6).

Reduces work load of midwives

The interviews with participants also revealed that the use of Moyo Doppler to monitor FHR has contributed to the reduction of workload. They described that once a mother is

admitted and the device is inserted, a midwife can continue with other activities while the FHR is being monitored midwives as attest by one participant:

".....Moyo Doppler reduces work load of midwives during fetal heart rate monitoring. It does not need frequent positioning of the mother compared to Pinard fetoscope……" (Participant5).

Another participant said that:

".....Moyo Doppler reduces over burdening to the midwives when it comes to monitoring of theFHR. The FHR need to be monitoredafter every 30 minutes at first stage of labor and every 5 minutes at second stage of labor but by using Pinard fetoscope is difficult…." (Participant7)

Pinard fetoscope is time consuming

With regard to the use of Pinard fetoscope, the midwives reported that using Pinard fetoscope is time consuming and one can use so much time in serving just a single mother. Participants further narrated that much time is used to find out the right position to put the device in order to check the fetal heart rate. One of the participants expressed that:

"……If the mother has severe labor pain, I should wait for a while to wait the woman to relax, this is a big challenge to midwives. Fetal heart rates during this period are not monitored. Let us use Moyo Doppler so that to allow the service to be given on time and reducing problems of not monitoring the fetal heart rate….." (Participant1).

Other participants added that:

"……*By using Pinard fetoscope, it is very difficult to locate and hear the fetal heart rate and heart beats of the mother at the same time, and this may cause a problem to a fetus and even if a baby is born will not cry once.….*" (Participant6).

Another participant said that:

"……In my view Pinard fetoscope is difficult to use; mother feel uncomfortable when midwives puts fetoscope on her abdomen to locate the fetal heart especially for the obese

and woman with edema, so there is no need of using Pinard fetoscope as long as the new technology has been introduced, I don't prefer Pinard to be used….."(Participant8).

Another participant added that:

"……I can say that Moyo Doppler it serves time, because once you set to mother's abdomen it senses itself, it has its mechanism of detecting abnormalities on time, from my point of views. I like Moyo Doppler than Pinard fetoscope……"(Participant2)

4.3.2 Usefulness of Moyo versus Pinard fetoscope

Moyo alert midwives in case of danger signs

Moyo Doppler has its mechanism of detecting alarming problems for quick intervention. The midwives have to orient the mother on how the device works if it produces an alarm it informs the midwife that there is something wrong.

One of participants said that:

"…I have to tell the mother about danger sign which need urgent interventions, if the device indicated green color; it means the FHR is normal, while yellow color indicates fetal distress which is danger to the fetus. If it reaches the yellow color it produces an alarm to alert the midwife that there is a problem where I must take action immediately…." (Participant 5).

Reduces chance of contamination

Moyo Doppler is a good device since reduces contamination when contacting the mothers' abdomen, and bed smell compared to Pinard fetoscope during monitoring midwife have direct contact with women, considering this era of HIV and Hepatitis-B the midwife can to be infected, Some of participants expressed that:

'…..Using Pinard fetoscope is not easer to avoid contamination and bed smell, taking into consideration that some woman are coming in labor ward while already soaked with liquor and faces as well……"(Participant 3).

Another participant added that:

"……When monitoring the FHR by using Pinard fetoscope I have to bend towards the mothers 'abdomen in order to capture fetal heart rate, by doing so the chance of getting infection is high because I have to perform this activity every 30 minutes until the mother get delivered……."(Participant 7)

Another participant added that:

"……Using Moyo Doppler does not need frequent positioning to the mother or bending frequently for fetal heart rate monitoring……"(Participant1)

Allows midwives to monitor multiple laboring women

Moyo Doppler is good it makes the work to be easier and reduces the work load to midwives. The Moyo Doppler helps to monitor the FHR and MPR at a time because every mother can be fixed up with the device contrary to Pinard where can be used for so many pregnant mothers in a different time.

One of participants narrated that:

"…… I can monitor many mothers at a time and enable me to provide a quality care to the laboring mothers and to continue with other activities without interrupting the routine activities compared to previous time where mother who is in labor has to be monitored every after half an hour by using Pinard fetoscope…." (Participant 4).

Another participant added that:

".....Moyo Doppler facilitates midwives to provide quality of care because mothers are monitored during admission until the end of second stage of labor. Monitoring fetal heart rate at second stage is very difficult due to severe labor pains but by using Moyo Doppler I can monitor the FHR easily……" (Participant 3)

4.3.3 Challenges using Moyo Doppler over Pinard fetoscope

Electricity power is fundamental to Moyo Doppler,

Moyo Doppler in order to function properly needs to be complete charged. Without enough power it does not produce the reliable findings and this may cause harm to the fetus. Also to use Pinard fetoscope the midwives must be kin and competent on using this device, as some participants expressed that:

"…Once the charge is finished in the device it stops recording the findings and cannot keep the records all the time it needs to have charge…." (Participant 6)

Another respondent suggested that:

"……I f possible Moyo Doppler need alternative power supply in case of power cut off this will help to continue with the monitoring process……." (Participant 8)

Another participant said that:

"……*Let me emphasis one thing Pinard fetoscope is difficult to use because I need to be very kin and I must be in good position to differentiate between maternal pulse rate and fetal heart rate, failure to differentiate the FHR and MPR may cause problem to the fetus ……..."*(Participant1)

Insufficient Moyo Doppler for all admitted women

In order to monitor the mother properly and getting good outcome, there is a need to all women admitted in labor ward to be monitored by using Moyo device during admission till delivery each woman should monitored with her own device, as one of participant said that:

".....I can say that there is a shortage of Moyo Doppler because each mother is not fixed with one device when admitted till delivery, so that we can be able to make a good follow up of the fetal heart rate……"(Participant 3)

Correct reading depend on proper knowledge and skills

In order midwives to get correct reading relevant skills is needed and perspective experience is also important. Before using Moyo Doppler midwives should be educated on how to use the device hence the device is newly introduced, as some of the participants said that:

…….I can say that Moyo Doppler is not a bad thing, but it depends on our utilization we the midwives are not careful in controlling this device because we are so fast we can put more or little jelly hence you will not get a good results". (Participant.5)

Another participant added that:

".....To be honest by not following the procedure we can harm the fetus let us remember that we are doing that to help the fetus and the mother during the process of laboring which is a very tough and hard time for the mother and the fetus, so we should be careful…….."(Participant1)

Another participant added that:

"……My advice is that education should be given starting from the diploma level as it was for Pinard fetoscope, and also education should be provided to midwives without being exhaustion because it is a new device, and the problem is not the Moyo Doppler monitor but the user……" (Participant 8)

Moyo Doppler is more delicate over Pinard fetoscope hence need proper handling

The midwife has to handle the device with care during charging the midwife has to note the starting time and finishing time also when the device is inserted to the mother. One participant said that:

"…… when charging the device, one may come to disconnect the device without ensuring the that the device had a full charge this might because the device not to work properly so, I suggest that, during charging the device must the labeled indicating the starting time and removal time as we know this device without power can't work……." (Participant 7)

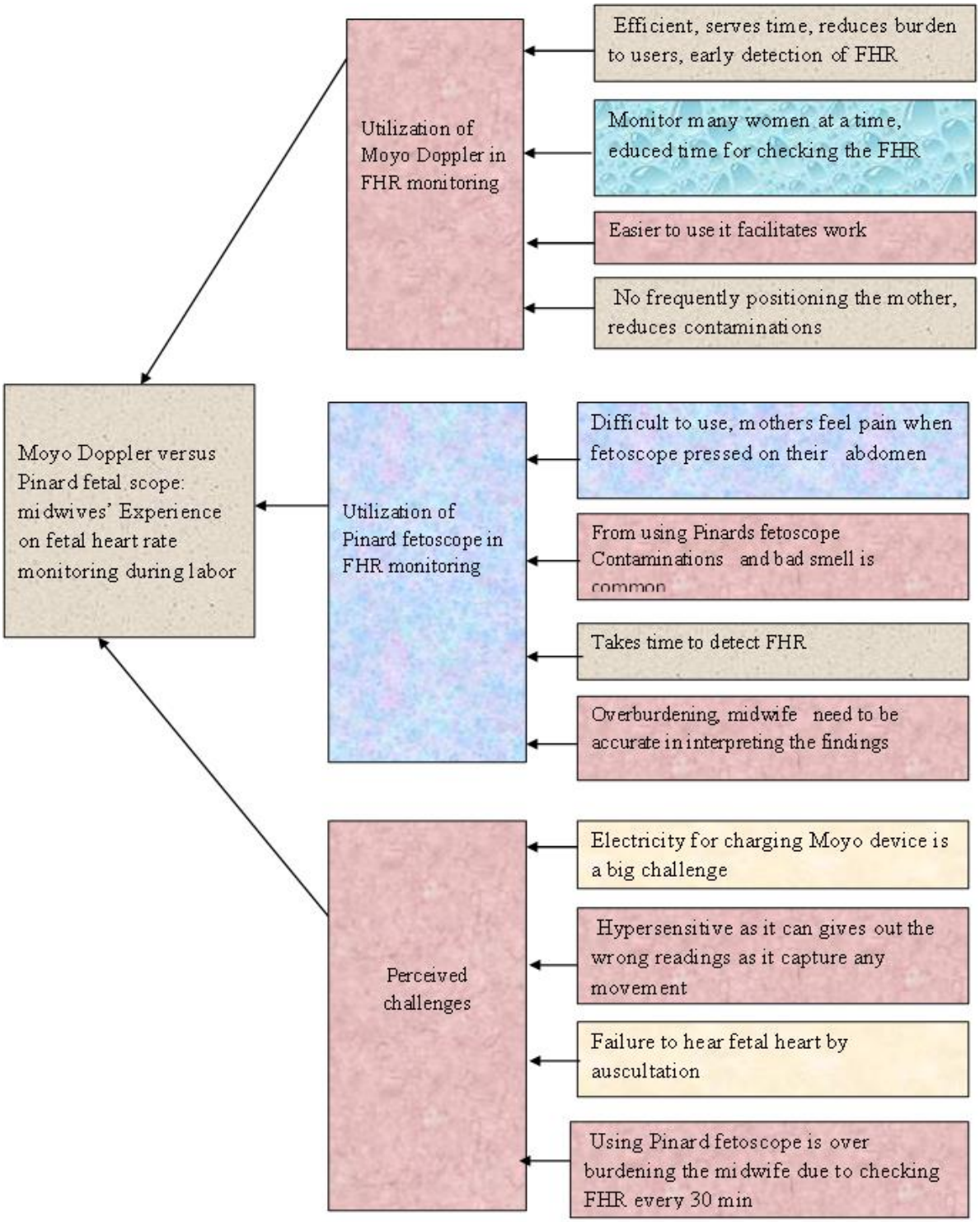


Figure 1 ; Summary of The Findings obtained from the Study

CHAPTER FIVE

5.0 DISCUSSION

5.1. Introduction

This chapter presents a discussion of the findings. The objective of this study was to explore the midwives perspectives on their experience of using Moyo Doppler versus Pinard fetoscope on fetal heart monitoring during labor. The purpose of the study focused at improving fetal heart rate monitoring practices, reflecting similar objective set in the Intrapartum fetal heart rate monitoring guidelines that was developed at the institute of obstetricians and gynecologists at royal college of physicians of Ireland which announced beyond doubt that monitoring of the fetal heart rate is an essential part of the fetus care in labor (Sinclair & Gardner, 2001).

According to the study done by Griggs on nurses' experiences of fetal monitoring, it was found that successful maternal and fetal outcomes depends on experiences and safe care given and was related to the use of Central Electronic Fetal Monitoring. It was further emphasized that the modern day obstetrical experiences within the inpatient setting are centered on the assessment of fetal well-being through the use of continuous fetal surveillance (Griggs, 2015). In this study it was recognized that fetal heart monitoring using different devices on detecting the fetal heart rate deviations and alerting the midwife quick interventions is very important. Furthermore, the study done by Mpembeni revealed that during the Intrapartum period the emphasis should be made on how midwives identifies and early detection of complication and immediate action should be taken (Mpembeni, 2014).

The study conducted by Langli which was carried out at the University of Oslo which said that the data from high-income countries suggest that fetal monitoring in conjunction with emergency obstetric care and targeted interventions has reduced perinatal mortality significantly and continuous electronic FHR monitoring was identified to be the gold standard for identifying fetus at high risk in the developed world (Langli*et al*, 2012).

On other hand, the study done by Kidanto at the Muhimbili University of Health and Allied sciences on improving quality of perinatal care through clinical audit which found out that the poor Intrapartum care including monitoring of FHR and treatment of risk factors that arise during labor had contributed to stillbirth rates (Kidanto.,*at el*2009)

5.3. Preference on utilization and usefulness of Moyo Doppler over Pinard fetoscope.

Pertaining to the capability in performing fetal heart rate monitoring using Moyo Doppler, the skills and competence among participants revealed that they were able to follow the important basic steps of fetal heart rate monitoring. The participants prefer to use Moyo Doppler hence facilitates midwives work and keeps record and findings also allowed midwives to be multitasked.The study done by Albers which found out that the midwives preferred to use electronic fetal monitoring at the initial assessment which is effective in improving neonatal outcomes in healthy women with uncomplicated pregnancy also when the midwife categories the women as high risk or low risk (Albers, 2012).

According to this study most of the participants said that Moyo Doppler is easy to use since it keeps the record, what you should do is just to read on the monitor and then record it to the patograph, it has an ability to differentiate the heart beats of the mother and the fetus hence helps the midwives not to confuse the FHR of the fetus and MPR. In the process of facilitating the midwives' work the device assists the midwives to use less time in FHR monitoring and give out the accurate result. The accurate result in the sense of fetal distress, the Moyo device helps the midwives to make early diagnosis and taking the action immediately of saving the fetus after the alarm sound which indicate danger sign. It is also more comfortable to use because the device is inserted on the abdomen of the mother direct to the back of the fetus, and allows the mothers to move around and do their other activities such as showering, walking and doing exercises which facilitate laboring process. This Moyo device also enables the mothers to hear the FHR of her fetus when the device is inserted to the mothers' abdomen this is due the device has audible sound. However the Moyo device helps to reduce the chance of being contaminated to the midwives from the mothers and this happens most of the time when the mother come in a labor ward with severe labor pain as result touching herself every part of her body such as a private part and her hands become contaminated later touching the midwives. Some of

the midwives said that there is a need of technical training on how to use the Moyo device because it is a new technology to them at the labor ward.

In this study revealed that Moyo Doppler device alarming the midwives for the danger signs. This complied withfetal monitor user guide developed by Leardal global health which emphasizes to apply gel on the ultrasound sensor and place it on the mother's abdomen (if possible over the fetal back). If there was no heart rate sound heard, they had to reposition the ultrasound sensor until ther hythmic FHR sound was heard. Infetal monitor use guides, palpation to identify fetal position was suggested, so as to achieve best results (Safer birth, 2014).Moreover, participants explained that there was colour coding that was used for detecting the fetal heart rate in different situations. Green indicates normal fetal heart rate, yellow indicated fetal distress and red indicated severe fetal distress. In their explanation it was noted that if it reaches yellow it produces alarm to alert the midwife for quickly intervention.For example the study done by Mohammed on Doppler ultra sound and fetal stethoscope said that abnormalities of fetal heart rate in labour were detected more easily with a Doppler ultrasound monitor than with a fetal stethoscope (Mohamed *et al*., 1994).

On the other hand a study conducted by Ersdal which was carried out at Haydom Lutheran Hospital (HLH) found that the ability to detect the fetus at risk such as fetal asphyxia and severe asphyxia during labour is a key and critical means for successive interventions to reduce deaths and improve perinatal health. (Ersdal *et al*, 2012).
According to some of the participants said that Pinard is a device used for so long and is very familiar to many midwives so it cannot be abandoned due to the presence of Moyo Doppler rather than it should be used in some circumstances in case of electricity cut off.
Furthermore, most of the participants in this study said that the Pinard fetoscope is difficult to use and differentiate maternal pulse rate and fetal heart rate. The Pinard device can be difficult to use in the process of using it because is using more time to monitor just a single mother. The study done by Byaruhanga and others on Wind Doppler versus Pinard fetoscope revealed thatPinard fetoscope it requires additional time to specifically locate the fetal heart rate as the fetal heart rate is only audible within a very narrow area of the woman's abdomen. (Byaruhanga*et al*, 2015).

However the midwives should be in good position to differentiate between maternal pulse rate and fetal heart rate because the device can't differentiate them thus why the midwives should be very careful in interpreting the result. Moreover Pinard is difficult to use because you can't monitora women who is in a severe labor pain, you have to wait until the pain has gone off. This Pinard device makes the mother uncomfortable due to the process of using it when you place the device on the mothers' abdomen she feels pain and frequently positioning of the mother. According to fetal heart monitoring during labor, at the first stage of labor you have to check FHR after every thirty minutes and at the second stage of labor you have to check after every five minutes and this is done before and after contraction and this is very difficult to assess the FHR by doing so we miss some parameter of FHR so we can't know if the fetus can get distress or not because this process is so difficult especially when the fetusis in the process of passing through the birth canal. Most participants said that using Pinard is not easy to avoid contaminations and bad smell because the midwives during the monitoring have to be direct contact to the mother who has already contaminated with liquor and feces and body fluid. Sometimes midwife can inhale the foul smell from the woman's private part.

Some of the participants said that using Pinard device is difficult for the obese and the woman with edema because it used much time to locate and hearing fetal heart rate. The study done by Robyn said that intermittent auscultation is a fundamental midwifery skill on fetal heart monitoring. Also requires effective communication as well as the ability to listening carefully, counting the sound and interpret what is heard (Robyn, 2012). In developing countries intermittent FHR monitoring using Pinard fetoscope is the only main way of monitoring fetal heart rate during labour.

5.4. Challenges on using Moyo Doppler over Pinard fetoscope on fetal heart rate monitoring during labor.

In this study the findings revealed that there were few challenges in using Moyo Doppler device. Some of the participants saidthat where there are shortages of power or the device is not charged the midwives can't monitor the FHR and MPR, the device working by using electricity power. If the device is not charged, it can't operate. So that in order for the midwife to continue to monitor the FHR she/he has to use Pinard fetoscope. Some participants as they have said that Pinard fetoscope should not be ignored.

On the other hand, some of the participants revealed that there were some difficulties in using Pinard fetoscope these included, over burdening the midwife when checking the FHR every after 30 min, due to frequent bending during auscultation which resulted in back ache. In addition midwives said that fetoscope was good to be used by midwife who had no problem in hearing. Some participants said that sometimes midwives would fail to differentiate between the fetal heart rate and the maternal pulse rate .Also midwives monitored fetal heart rate for 30 seconds and then multiply the findings by two as results giving inaccurate findings. Pinard fetoscope is difficult to use due to midwife failure to locate the fetal heart beatdue to the fact that fetal heart rateis captured onsmall area on the mother's abdomen.

A study done by Byaruhanga and others which found that Pinard fetoscope it requires additional time to specifically locate the fetal heart rate as the fetal heart rate is only audible within a very narrow area of the woman's abdomen. (Byaruhanga*et al*, 2015).

Some of the participants said that insufficient of Moyo Doppler for all admitted women is another challenge. They said Moyo Doppler are few to accommodate the all pregnant mothers who are admitted in labor ward as we know that FHR monitoring is very fundamental during labor because it helps the midwives to know the wellbeing of the fetus. It is also help the midwife to make a consistence follow up of the FHR during labor. The Moyo Doppler are few because they are newly introduced device in Muhimbili labor ward thus why some of the participants suggested that there is a need of ongoing training to all midwives who are working in the maternity block in order for them to be familiar with the utilization of the device.

5.5. Limitation of the study

At MNH labor ward there are only two male midwives and actually I wanted to interview them. However during recruitment time one male midwife was on annual leave while the other was sick. Therefore I had interviewed only female midwives.

The verbatim translation of the interviews from Swahili to English may affect the quality of data as some Swahili words may not have direct meaning in English.

This however, was managed by a researcher orienting and engaging the research assistant to the interview guide and assisted him to understand critically at the transcribed words so as to assist in coming up with English words that may closely reflected the same meaning in Swahili.

5.6 Implication for midwifery practice

It is important to monitor fetal heart rate during labor by user friendly device. Fetal heart rate monitoring during labor is vital in prevention of birth asphyxia which is a major cause of prenatal and neonatal morbidity and mortality. Furthermore, user friendly fetal heart rate devices like Moyo Doppler should be considered particularly in developing countries like Tanzania where midwives are still using non electronic devices like Pinard fetoscope which is difficult to use because of the workload midwives are encountering. Ministry of health and social welfare, community, elders and children make emphasis on reducing neonatal death, this will be implemented by qualified midwives and user friendly device of fetal heart rate monitoring which detects early signs of fetal distress and early interventions before asphyxia ensures.

CHAPTER SIX

6.0 CONLUSION AND RECOMMENDATION

6.1. Conclusion

This study has reveled that most midwives had an experience on using Moyo Doppler for fetal heart rate monitoring. Most midwives preferred to use Moyo Doppler due to its easier usability, it reduces the work load in the sense that it enable the midwife to monitor multiple labouring woman at the same time, it produces reliable results and detects fetal abnormalities early and helps midwives to take action immediately.

The following were the suggestions from participants, increasing the number of Moyo Doppler to the extent that all the mothers who are coming at the labour ward are monitored using Moyo Doppler, Having Moyo Doppler which uses battery and electrical charge to provide sustainable services. However, abandoning Pinard fetoscope was not suggested because it can be used in some circumstances such as electricity cut off.

6.2. Recommendation

The study has suggested three areas of recommendation that is practice, policy and further research:

Practise

- Moyo Doppler may use both battery and electrical charge
- Pinard fetoscope may not be abandoned because in case of electricity cut off Pinard fetoscope can be used.
- On-job training on using Moyo Doppler maybe conducted to all midwives who are working at maternity block..

Policy

- Muhimbili National Hospital authority may advise the government to ensure that Moyo Doppler can be used in regional and district hospitals because it helps to reduce the work load of the midwives.
- Policy makers may advise to include Moyo Doppler in the midwives training curriculum as Pinard fetoscope

Further Research

- Further research can be carried out on all hospitals which are using Moyo Doppler to describe and determines the perspective experience of utilization and the effectiveness of the device by using both methodology approaches qualitative and quantitative, in order to get the large sample size.

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APPENDICES

APPENDIX A1: INFORMED CONSENT

CONSENT TO PARTICIPATE IN A STUDY TITLED MOYO DOPPLER VERSUS PINARD FETOSCOPE: MIDWIVES' EXPERIENCE ON FETAL HEART MONITORING DURING LABOUR AT MUHIMBILI NATIONAL HOSPITAL.

ID NO

Greetings! My name is Mary Maurice Mtaki. Currently, I am a student at Muhimbili University of Health & Allied Sciences pursuing MSc in MWH. I am conducting a research on the title Midwives experience on fetal heart monitoring during labour using Moyo and Pinard fetoscope.

Purpose of the study

The aim of this study is to explore midwives experience on fetal heart monitoring during labour using Moyo and Pinard fetoscope. Findings of this study will help to provide a beginning point to direct man resources which are scarce to help midwives to carry their duties effectively.

Sponsor

Laerdal Global Fund

Involved Participation

This study will involve registered midwives who are working at labour ward Muhimbili National Hospital, you are free to decide either to participate in the study or not

If you agree to participate in this study I will request you to answer the question relation to your experiences through face to face in-depth interview on how you monitor fetal heart rate during labour using Moyo and Pinard fetoscope. The interview will take about 35 minutes.

Confidentiality

The information that will share in the face to face in-depth interview will be treated as strictly confidential and will be used only for research purpose only and not for other reasons. Your name will not be used for identification during data analysis and report development, the instead number will be used.

Risks

The researcher anticipates no harm will happen to you as you participate in this study.

Benefits

There will be no direct financial benefits to you; however; participation in this research has the potential for improving your knowledge of new technology on fetal heart monitoring during labor through recommendations that will be made for the management team of the hospital.

Rights to Withdraw and Alternatives

To participate in the study is voluntary. You are free to choose whether to participate or not. Refusal to participate, or withdrawal from the study, will not imply penalty to your work as a midwife. However, we would like you to participate in this study because your views are very important.

Whom to Contact

In case of any emergence concern you may contact the researcher through the following address:

Mary Maurice Mtaki, School of Nursing, MUHAS. P. O. BOX 65004, Dar es Salaam.
Email address: marymaurice2001@yahoo.com Mobile 0754 519 462

If you have a serious matter about this research related to violation of your rights, and you feel that the researcher has not been able to help you are free to contact Prof. Said Aboud, Directorate of research and Publication committee, MUHAS, P.O. Box 65001, Dar es Salaam, Telephone number 2150302-6.

Agreement of participation

I_____, identification number _____,

Aged _____years, I am willing to participate in this study

Informant's Signature_____ Researcher's Signature_____

Date _____ Date _____

APPENDIX AII: FORM YA RIDHAA

KUSHIRIKI KWENYE UTAFITI: MOYO DOPPLER VERSUS PINARD FETOSCOPE: UELEWA WA MKUNGA KATIKA KUPIMA MAPIGO YA MTOTO KWA MAMA MJAA MZITO WAKATI WA UCHUNGU.

ID NO

Habari ninaitwa Mary Maurice Mtaki mwanafunzi wa shahada ya pili ya ukunga na afya ya akina mama Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili (MUHAS). Nafanya utafiti kuangalia uelewa wa mkunga katika utumiaji wa kifaa kipya (Moyo Doppler) na kifaa cha zamani (Pinard fetoscope) kwa mama mjaamzito akiwa na uchungu katika Hospitali ya Taifa Muhimbili (MNH).

Lengo la utafiti

Utafiti huu unaangalia kwa kina zaidi uelewa wa mkunga katika kumhudumia mama mjamzito wa kati akiwa na uchungu na upimaji wa mapigo ya mtoto.Taarifa hii itasaidia kuboresha huduma ya mama mjamzito wakati wa kujifungua katika Hospitali ya Taifa Muhimbili. Kwa kutumia taarifa hizi uongozi unaweza kupanga mikakati mikubwa zaidi ya kuongeza vitendea kazi ili kuboresha huduma zaidi.

Mdhamini

Laerdal Global health.

Kwa wale watakaoshiriki

Kama utakubali kushiriki katika utafiti huu utatakiwa kutueleza kwa kina uelewa wako kwa jinsi gani wewe kama mkunga unavyotoa huduma kwa mama mjamzito wakati wakujifungua mahojiano yetu yatachukua dakika 35 mpaka dakika 45 pia inatagemeana na taarifa alizonazo mkunga.

Usiri

Majibu utakayoyatoa katika mahojiano yatabaki kuwa siri na hayataonyeshwa popote na hayatatumika kwa shuguli nyingine yeyote.Taarifa utakazozitoa zitatumika kwa ajili ya lengo la utafiti tu au kitu chochote cha kukutambulisha kitaonekana kwenye ripoti badala yake namba zitatumika badala ya jina lako.

Madhara

Hatutegemei kwamba kutatokea madhara yeyote kwa kushiriki kwako katika utafiti huu.

Faida

Katika kushiriki kwako katika utafiti huu hautafaidika wewe binafsi kama malipo ya kifedha japo kuwa kushiriki kwako katika utafiti huu ni muhimu sana kwani maoni utakayoyatoa yatapelekea kuboresha huduma za mama mjaamzito wakati wakujifungua na uongozi wa MNH kuboresha huduma kwa kuongeza vifaa ili kazi ya mkunga iwe nyepesi na yenye ubora.

Haki ya kujitoa au vinginevyo

Ushiriki katika utafiti huu ni wa hiari. Uko huru kushiriki au kutokushiriki, kukataa au kusitisha katika utafiti huu hakutakuwa na athari yeyote katika kazi zako za ukunga. Hata hivyo tungependa ushiriki wako katika utafiti huu kwa sababu mawazo yako ni muhimu sana katika huu utafiti.

Watu wakuwasiliana nao

Kama utakuwa na maswali katika utafiti huu unaweza kuwasiliana na mtafiti mkuu, Mary Maurice Mtaki kutoka Chuo kikuu cha Afya na Sayansi Shirikishi Muhimbili.
P. O. BOX 65004, Dar as Salaam. Baruapepe: marymaurice2001@yahoo.com Simu namba: 0754 519 462

Ukubali wa mshiriki

Mimi …….. Umri……..Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki……Tarehe ……

Sahihi ya mtafiti/mtafiti msaidizi……

APPENDIX B1: INTERVIEW GUIDE

Preamble

My name is Mary Maurice Mtaki; Currently I am a student at Muhimbili University of Health & Allied Sciences pursuing MSc in MWH. I am conducting a research with the title Midwives experience on fetal heart monitoring during labor using Moyo and Pinard fetoscope I am currently registered as MSc. student at Muhimbili University of Health & Allied Sciences

I would like to hear more views from you and permission to tape you. I will use a high – quality audio clip record to ensure data accuracy.

I anticipate your participation in this study through face to face individual in-depth interview will enable you to give your experiences on fetal heart monitoring using Moyo and Pinard fetoscope during labor. The information given will generate a research report that will be used by MNH management, midwives to make some recommendations that will help in improving care to pregnant women during labor.

Kindly please feel free to share your experiences and experiences on fetal heart monitoring during labour using Moyo and Pinard fetoscope .Your views are highly respected and all will be kept confidentially.

Interview ID No …….. Date of interview …….

PART A: PARTICIPANT DEMOGRAPHIC INFORMATION

1 Age (years)…… 2. Sex of participant ……..

3. Years of work experience …… 4. Educational level…..

PART B: QUESTIONS

Moyo Doppler.

- Have you ever used Moyo Doppler to monitor fetal heart rate?
- Explain how to use it
- Tell me your views on the use of Moyo Doppler.

Pinard fetoscope

- Have you ever used Pinardfetoscope to monitor fetal heart rate?
- Explain how to use it
- Tell me your views on the use of Pinard fetoscope

3. Experience of midwife on the device

- What are your views towards fetal heart rate monitoring by using either Moyo or Pinard fetoscope? Probe more

4. Pinard fetoscope

- What are your views related to Moyo Doppler and Pinard fetoscope on fetal heart rate monitoring?

5. Challenges of the devices

- What challenges do you face when using Moyo Doppler or Pinard fetoscope? Probe more
- How do you overcome those challenges?

APPENDIX B II: MWONGOZO WA MASWALI

Mpendwa, Mkunga,

Naitwa Mary Maurice Mtaki , mwanafunzi wa mwaka wa pili nasoma shahada ya uzamili ya ukunga na afya ya mama, katika Chuo Kikuu cha Afya na Sayansi shirikishi Muhimbili (MUHAS).

Ninafanya utafiti kuangalia mtazamo wa mkunga katika kifaa kipya (Moyo Doppler) na kifaa cha zamani (Pinard fetoscope) kwa mama mjamzito wakati wa kujifungua. Ninahitaji mawazo yako na mchango wako. Kwa ruhusa yako, ili kuzingatia utakayonieleza nitatumia kinasa sauti. .Taarifa utakazo nipa nitazitunza na nitazitumia kwa ajili ya utafiti huu tu na sio vinginevyo.

SEHEMU A TAARIFA ZA MKUNGA

Namba ya Mkunga …… Tarehe ya mahojiano …… Jinsia ……..

Kiwango cha elimu ……..Kazi ……..Uzoefu wa kazini ……

SEHEMU B MASWALI

1. Moyo Doppler fetal monitor

- Umeshawahi kutumia Moyo Doppler kupima mapigo ya mtoto kwa mama mjamzito wakati wa kujifungua?
- Naomba unieleze kwa kina unajua jinsi ya kuitumia?
- Nieleze maoni yako ?

2. Pinard fetoscope

- Umeshawahi kutumia Pinard fetoscope kupima mapigo ya motto kwa mama mjamzito wakati wa kujifungua?
- Naomba unieleze kwa kina unajua jinsi ya kuitumia?
- Nieleze maoni yako?

3. Uelewa wa mkunga.

- Nini uelewa wako unapo tumia Moyo Doppler na Pinardfetoscope wakati wa kupima mapigo ya mtoto kwa mama mjamzito wakati wa kujifungua?

4. Pinard fetoscope

- Nielezee uelewa wako kwa kina kuhusu utumiaji Pinard fetoscope unapopima mapigo ya motto kwa mama mjamzito wakati wa kujifungua?

5. Changamoto anazokutana nazo mkunga wakati anapotumia vifaa hivi

- Nieleze changamoto unazokutana nazo katika utumiaji wa kifaa cha Moyo Doppler na Pinard fetoscope.
- Unaweza kunieleza jinsi unavyokabiliana na hizo changamoto.

APPENDIX C: APPROVAL OF FROM MUHAS

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz

Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
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E-mail: dpgs@muhas.ac.tz

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

27th May, 2016

Ms. Mary M. Mtaki
MSc. Midwifery and Women's Health
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "MOYO DOPPLER VERSUS PINARD'S FETOSCOPE: MIDWIVES' PERCEPTION ON FETAL HEART RATE MONITORING DURING LABOR AT MUHIMBILI NATIONAL HOSPITAL"

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. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from 26th May, 2016 to 25th May, 2017. In case you do not complete data analysis and dissertation report writing by 25th May 2017, you will have to apply for renewal of ethical clearance prior to the expiry date.

Prof. Andrea B. Pembe
DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Nursing

APPENDIX D: PERMISSION LETTER FROM MNH

MUHIMBILI NATIONAL HOSPITAL

Cables: "MUHIMBILI"
Telephones: +255-22-2151367-9
Fax: +255-22-2150534
Website: www.mnh.or.tz

Postal Address:
P.O. Box 65000
Dar es Salaam
Tanzania

31/05/2016

In reply pleas quote:
MNH/TRC/Research/2016/017

Ms. Mary M. Mtaki
MUHAS

RE: PERMISSION TO COLLECT DATA AT MNH: 2016/017

Name of Student	Ms. Mary M. Mtaki
Title	Moyo doppler versus pinard's fetoscope: Midwives' perception on fetal heart rate monitoring during labor at Muhimbili National Hospital
Institution	MUHAS
Supervisor	Dr. Sebalda Leshabari Dr. Hussein Kidanto
Period	1st July 2016 - 31st January 2017

You have been permitted to collect data in respect to the above mentioned study. Please ensure you abide to the ethical principles and other conditions of your approval.

Sincerely,

Dr. Samson Paul Ndile
Ag. Head of Teaching, Research and Consultancy Coordination Unit

Cc: DNS, BM-Maternity I