



Kamuzu College of Nursing

**WOMEN'S AWARENESS AND PREFERENCES FOR BIRTHING POSITIONS: A
COMPARISON WITH MIDWIFERY PRACTICES, A STUDY CONDUCTED IN
CHIKHWAWA DISTRICT**

By

Tiwonge Ndindase Nyirongo

University Certificate in Midwifery (UCM), Bachelor of Science Degree in Nursing (Bsc.N)

**A thesis submitted in partial fulfilment for the award of a Master of Science Degree in
Midwifery**

October, 2015

CERTIFICATE OF APPROVAL

The undersigned certify that this thesis represents the student's own work and effort and has been submitted with our approval.

Signature _____

Date _____

Ellen Chirwa, PhD (Professor)

Main Supervisor

Signature _____

Date _____

Sandandaula Rose Matamba, MSc (Senior Lecturer)

Second Supervisor

DECLARATION

I, Tiwonge Nyirongo declare that this thesis is my own work and has not been presented for any other awards at the University of Malawi or in any other university.

TIWONGE NDINDASE NYIRONGO

Full Legal Name

Signature

Date

DEDICATION

To my late mom Wezi Nyirongo for the unconditional love and care, you always encouraged me mom. May your soul rest in peace

ACKNOWLEDGEMENTS

First and foremost, I would like to express my deepest gratitude to the almighty God for keeping me in good health throughout the entire period of my study. Secondly, my gratitude should go to the management of Kamuzu College of Nursing for considering me to be one of the students awarded with the UNFPA scholarship and my employer Ministry of Health for giving me the opportunity to pursue my studies. I am so grateful to UNFPA for funding my studies.

My deepest appreciation should go to my Supervisors Professor Ellen Chirwa and Mrs Rose Matemba for the excellent guidance and insightful comments. You supported me tirelessly and instilled in me the hard working spirit, I do not take this for granted. I also acknowledge the contributions from the research director Dr Alfred Maluwa for the expertise in the methodology used in the study.

I would never have been able to complete my thesis without support from my family, classmates and friends. Their love and support helped me to overcome setbacks and to remain focused on my studies. I am also indebted to the management of Chikhwawa DHO as well as my colleagues from Chikhwawa DHO, St Montfort hospital, Ngabu Rural Hospital and Mfera Health Centre for the support they rendered during the entire period of data collection.

May God Bless you all

ABSTRACT

This study aimed at determining women's awareness of birthing positions as well as their preferences for any particular position. Studies have shown that the supine birthing position during labour and delivery has many disadvantages to the mother, the foetus and on the progress of labour. In health facilities, women mostly use the supine position for delivery. This forces some women to deliver in their homes. This cross-sectional, descriptive quantitative study was conducted at Chikhwawa District Hospital, St Montfort Hospital and Mfera Health Centre in Chikhwawa District. A total of 267 women aged 18 to 50, having at least a second pregnancy or second birth attending antenatal and postnatal services and 17 midwives working in the labour wards of the three facilities were recruited in the study. The data for the women was collected using an interview schedule and an observational checklist was used for the midwives. The data was analysed using Statistical Package for the Social Sciences (SPSS) version 20. Ninety eight percent (n=261) of the women were aware of the supine position and the sitting position was known by only 21% (n=56) of the women. Thirty two percent of the women had in-depth knowledge of the benefits of the upright positions and only 12% (n=31) of the women preferred to use upright position. The women's location had an influence on their knowledge of the benefits of upright positions ($\chi^2=24.05$; P-value=0.001) and the women's age had an influence on their preference for upright positions ($\chi^2=21.14$; p-value=0.002). There were no information, education and communication (IEC) materials and equipment for positioning the women in upright position and all the midwives used the dorsal position when conducting the deliveries. Overall, there was some knowledge gap on upright positions among the women as well as the midwives. Midwives should therefore be empowered with knowledge and skills for the upright positions and the women

should be equipped with knowledge of the various positions so that they should make informed choices.

TABLE OF CONTENTS

CERTIFICATE OF APPROVAL	i
DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
TABLE OF CONTENTS	vii
List of tables	xi
List of Figures	xii
Abbreviations and Acronyms	xiii
Definition of terms	xiv
CHAPTER ONE.....	1
Introduction and Background	1
Introduction	1
Background	3
Significance of the Study.....	5
Problem Statement	7
Objectives	7
Broad Objective.....	7
Specific Objectives.....	8
CHAPTER TWO.....	9
Literature Review	9
Introduction	9
Literature Search Strategy	9
An overview of Positions for Second stage of Labour	11
Supine Position.....	13
Upright positions for Second stage.....	16
Women’s Preferences and Experiences of Birthing Positions	20

Midwives' Practices of Birthing Positions	25
Factors That Promoted the Use of Upright Positions	28
Conclusion.....	32
CHAPTER THREE.....	34
Methodology	34
Study Design	34
Study Site	34
Study population.....	34
Sample Size	35
Sampling Method	37
Inclusion criteria.....	37
Exclusion Criteria.....	37
Data Collection.....	38
Data Management and Analysis	40
Validity and Reliability of the Research.....	41
Ethical Considerations.....	42
CHAPTER FOUR.....	44
Study Results.....	44
Introduction	44
Participants for the Study	44
Demographic Characteristics of the Women	45
Demographic Characteristics of the midwives.....	47
Women's Knowledge of Birthing Positions	48
General Knowledge of Birthing Positions.....	48
Knowledge of Positions used in Health Facilities and Home Setting	49
Source of Knowledge for the Positions	50
Knowledge of Upright positions	51
Women's Experience of Birthing Positions.....	52
Percentage of Deliveries in Health Facility and Home Settings.....	52

Personnel Conducting Deliveries	53
Positions Assumed at Full Dilatation, during Pushing and during Delivery	53
Women’s Preferences for Birthing Positions	54
Preferred Positions for Second Stage	54
Change in Health Facilities	55
Midwives Practices.....	57
Guidelines and protocols	57
Positions for Pushing and Delivery	57
Relationship/Correlation/Association of the Variables.....	58
Relationship between Location and Knowledge of Upright Positions	58
Relationship between Location and Upright Positions Preference.....	58
Relationship between Age and Knowledge of Upright Positions.....	59
Relationship between Age and Upright Positions Preference	59
Relationship between Educational Level and Knowledge Upright Positions	60
Relationship between Educational Level and Upright Positions Preference.....	60
Relationship between Occupation and Knowledge of Upright Positions.....	60
Relationship between Occupation and Upright Positions Preference	61
Relationship between Parity and Knowledge of Upright Positions.....	61
Relationship between Parity and Upright Positions Preference	62
Relationship between Knowledge of Upright Positions and Upright Positions Preference	62
Relationship between Midwives’ Experience and use of Upright Positions	62
Summary of the Results	63
CHAPTER FIVE.....	65
Discussion	65
Introduction	65
Socio-demographic Characteristics Associated with Birthing Positions.....	65
Location of the women.....	66
Age of the Women.....	67
Educational Level.....	69

Occupational Status.....	71
Parity and Knowledge of Upright Birthing Positions.....	72
Women’s Knowledge of Birthing Positions	73
Women’s Experience of Birthing Positions.....	76
Women’s Preferences for Birthing Positions.....	78
Midwives Practices.....	81
Study Limitations	88
Recommendations	88
Policy making.....	89
Midwifery Practice	89
Education.....	90
Research	90
References	92
APPENDICES.....	102
Appendix 1: Information Sheet for Women	102
Appendix 2: Consent Form for Women.....	104
Appendix 3: Information Sheet for Women, Chichewa Version	105
Appendix 4: Consent Form for Women, Chichewa Version	107
Appendix 5: Information Sheet for Midwives.....	108
Appendix 6: Consent Form for Midwives.....	110
Appendix 7: Observation Checklist for Midwives	111
Appendix 8: Interview Schedule for Women	115
Appendix 9: Structured Questionnaire for Women, Chichewa Version	123

List of tables

Table 1: Demographic Characteristics of the Women..... 46

Table 2: Demographic Characteristics of the Midwives 48

Table 3: Source of Knowledge for the Positions 51

Table 4: Advice for the Hospital 56

Table 5: I can't advise 57

List of Figures

Figure 1: General Knowledge of Birthing Positions49

Figure 2: Percentage of Positions Used in Health facilities and Home Setting.....50

Figure 3: Scores for Knowledge of Upright Birthing Positions52

Figure 4: Deliveries at Hospital, Home & Hospital53

Figure 5: Positions assumed at full dilatation, during pushing and during delivery54

Figure 6: Preferred Positions for Second Stage.....55

Abbreviations and Acronyms

APOR B	Approche PosturoRespiratoire de Bernadette de Gasquet
BP	Blood pressure
BPP	Birth position preparedness
CDH	Chikhwawa District Hospital
COMREC	College of Medicine Research and Ethics Committee
HC	Health Centre
IEC	Information, education and communication
KCN	Kamuzu College of Nursing
MCP	Maternity care provider
MDG	Millennium development goal
MDHS	Malawi demographic health survey
NMT	Nurse Midwife technician
OPP	Occiput posterior position
PDR	Peoples Democratic Republic
RCT	Randomised control trial
RNM	Registered nurse midwife
SD	Standard deviation
SPSS	Statistical package for social sciences
TA	Traditional Authority
TBA	Traditional birth attendant
UK	United Kingdom
US	United States
WHO	World Health Organisation

Definition of terms

Sitting:	The woman rests chiefly on her buttocks with the legs bent and the feet flat on the bed
Lithotomy:	The woman lies on her back with legs on stirrups.
Dorsal:	The woman lies flat on her back with her legs flexed and abducted straight or bent
Semi-recumbent:	The woman lies on her back supported with pillows or a wedge at the back at an angle equal to or less than 30 %
Kneeling:	Kneeling on bed or floor, leaning forward on the palms of her hands or onto the back of the bed or other support
All-fours:	Crouched position of being on hands and knees
Side lying:	The woman lies on side with both hips and knees flexed or with her upper leg raised and supported
Squatting:	The woman rests chiefly on her feet, with knees fully or partially bent.
Birth chair:	The woman sits upright on a birthing stool supported by a partner at the back
Standing:	The woman stands and is supported by the husband/partner or she may lean on a counter or furniture
Trendelenburg	The body lies flat on the back and the feet are raised higher than the head to about 15-30 degrees

CHAPTER ONE

Introduction and Background

Introduction

Supine positions, despite having adverse effects on fetal heart rate, uterine contractility and progress of labour (Lawrence, Lewis, Hofmeyr, Dowswell, & Styles, 2009), are the most preferred birthing positions by midwives, obstetricians and some women (Lugina, Mlay, & Smith, 2004; Mwanzia, 2013). Some women prefer to deliver in upright positions such as squatting or kneeling when giving birth, however, this is not offered in most hospitals as medical personnel are mostly trained to deliver babies with a woman lying on her back. This may make some women to choose to deliver outside the hospital (Afsana & Rashid, 2001). Home deliveries are associated with obstetric complications which may further contribute to the rise in the number of maternal deaths which are currently estimated at 675 per 100, 000 live births (National Statistical Office, 2011).

Women use supine positions because they feel it is expected of them to do so (Royal College of Midwives, 2012) or because the positions might have been suggested by their midwives especially during the first pregnancy (De Jonge, Teunissen, Van Diem, Scheepers, & Lagro-Janssen, 2008). Women have also reported using the supine positions having heard about them during antenatal classes, from friends or the media (De Jonge, et al., 2008). Lack of knowledge of the different types of birthing positions by women also contributes to women assuming the supine positions during labour and delivery. This is supported by Okonta (2012) who found that only 31% of the pregnant women know more than one position with the most

known being the supine position. This lack of knowledge is attributed to midwives failure to inform women on the different types of birthing positions as it has been found that midwives give information of the birthing position only when women ask about them and that they do not actively offer the women informed choice (De Jonge, et al., 2008). Thies-Lagergren, Hildingsson, Christenson and Kvist (2013) also found that women give birth in the upright positions if they participate in decision making regarding their care.

Choice of birthing positions may also be influenced by obstetric factors, health worker factors and hospital policies or protocols. Midwives may suggest birthing positions to women if there are obstetric complications. For instance if there is fetal bradycardia or failure of labour to progress (De Jonge & Lagro-Janssen, 2004) they may instruct the woman to assume an upright position to improve the situation. Midwives may also choose delivery positions after considering their own comfort or the ease of carrying out midwifery procedures (De Jonge, et al., 2008). On the one hand, midwives who feel comfortable with the upright positions may give information about the positions and may allow the women to use them. On the other hand, midwives who feel uncomfortable with the upright positions may not give the women a chance to choose their preferred birthing position. Lack of written policies or protocols for normal labour may also contribute to midwives' non-use of upright birthing positions (Khalil et al., 2005). For instance, if the protocols or policies stipulate that women should be delivered in supine position, it may be difficult for health workers to do otherwise.

In Malawi, supine positions are the most commonly used positions for delivery in hospitals (Kongnyuy, Mlava, & Van Den Broek, 2009). The lack of freedom to choose birthing positions in the hospitals may hinder some women from delivering in health facilities (Hunt, Glantz, & Halperin, 2002). Factors contributing to this preference in Malawi have not

been explored. The primary objective of this study is therefore to explore women's awareness as well as their preferences for the birthing positions.

Background

The birth of a child is one of the most significant events in a woman's life. Practices surrounding the birthing process are important to the woman's health as well as the successful outcome of her pregnancy. Good practices during labour and birth include use of optimal positions that are suitable for the different stages of labour and for delivery process. Different birthing positions have been used over the years.

Historically, it is evident that the most common birthing positions have been the upright positions. Ancient women delivered in upright positions such as kneeling or sitting on an assistant's lap. As time went by, external material objects such as birth stones and birth stools were developed to assist women during delivery. These objects assisted women to maintain a physiologically optimal upright position without the interference of a bed, closed seat or ground (Banks, 1999).

Changes of a woman's perspective of pregnancy started when science took over the process of childbirth and doctors claimed that women were too fragile for traditional childbirth. Aristotle was the first known advocate for the recumbent position. He claimed that this position was convenient to the accoucheur hence it should be used for birthing. In the seventeenth century, the advent of forceps for delivery further led to the retention of the reclining and lithotomy positions. The recumbent position became more popular when Madame de Montespan, mistress of King Louis XIV, laid down to give birth so that her lover could watch the delivery (Balaskas, 1992). In the same century, Francois Mauriceau, a leading figure in French obstetrics, scorned the use of birthing chair and advocated child birth in bed

while lying on the back claiming that this position was more comfortable for the parturient women as well as more convenient for the accoucheur (Dundes, 1987).

In the Victorian era (1837-1901), use of anaesthesia during delivery further established the supine position and by the end of this era, little was heard of the birthing chair (Balaskas, 1992). In the nineteenth century, anaesthetic for labouring women was promoted and the parturient was turned on her side to aid the conduct of labour and delivery. From that time on, the birth position which was convenient to the accoucheur became the choice of childbirth position and this practice spread throughout most of Western Europe and America (Liu, 1979). Today, majority of women in western societies deliver in the dorsal, semi-recumbent or lithotomy positions (Gupta, Hofmeyr, & Shehmar, 2012). This is contrary to what has been suggested by Kenyon, Ullman, Mori, and Whittle (2007) that women should be allowed to adopt whatever position they find more comfortable during labour. Conversely, women who deliver at home seem to enjoy the freedom of choosing birthing positions. This is supported by Tracy et al. (2007) who found that natural birth positioning is seen more often for births that occur in a birth centres or at home compared to deliveries that are conducted in a ward setting. Gupta and Nikodem (2000) also found that in traditional societies women are free to move about and to change positions as they wish.

The use of optimum birthing positions is vital for improving clinical outcomes. Upright positions allow spontaneous pushing, more efficient contractions and reduces labour pains (De Jonge et al 2008; Gupta & Hofmeyr, 2004)). Despite the evidence that supports the merit of upright positions, in practice, midwives do not give adequate information to labouring women which can allow them to make an informed choice on the birthing positions (Coppen, 2005). For instance, in Malawi many women are aware of only two birthing positions; the dorsal

position used in health facilities and the semi-recumbent position with the back rest elevated at 45 degrees mainly used by traditional birth attendants (Kongnyuy, Mlava, & Van Den Broek, 2009). Some women, especially older women, prefer to use the upright positions for second stage (De Jonge, Rijnders, Van Diem, Scheepers, & Lagro-Janssen, 2009). This may in part explain the percentage (27%) of deliveries that occur outside the health facility.

Women have reported that home settings are better because they are allowed to assume different postures which make the labour to progress faster (El-Nemer, Downe, & Small, 2006). In addition, the women have reported that they feel much pain when they use the supine positions. Moreover, the supine positions increase the rate of assisted vaginal deliveries and causes post-partum spine and lower extremity nerve injuries (Wong et al., 2003). For these reasons, birth should be considered as a natural phenomenon and women should be discouraged from lying on the bed during labour and delivery. In support of this, Malawian protocols for management of second stage of labour stipulate that women should be encouraged to assume the position that is comfortable and aids in the descent of the foetus (Ministry of Health [MOH], 2009). Whilst there is an outcry for the women to experience natural birth, most women who deliver in health facilities still use the supine positions (Higginbottom et al., 2013; Hodin, 2013; Shaban, Hatamleh, Khresheh, & Homer, 2011). Chikhwawa District is not spared from this practice since most women still deliver in the supine positions. It is therefore important to examine the reasons that contribute to this preference.

Significance of the Study

In Malawian hospitals, the most commonly used birthing positions are the supine positions. This may affect some women, especially those used to the upright positions, in the

sense that they may choose to deliver at home during their next pregnancy. Even if women were to choose upright birthing positions, midwives do not have adequate knowledge and skills to enable them to assist women in the upright positions during delivery. Additionally, nursing colleges emphasize much on the use of the supine birthing positions in their curriculum such that when students graduate from the colleges they do not have adequate knowledge and skills for the upright birthing positions. Besides that, there are no studies in Malawi that have looked at women's awareness and preferences of the birthing positions that are offered to them.

This study therefore sought to **explore** women's awareness of birthing positions and their preferences for particular birthing positions **in comparison to midwives practices**. The study results may influence change in midwifery practice as well as policy making. Midwives may adopt the use of the upright birthing positions thereby allowing natural birth as well as promoting a positive birth experience by the women. The results may also influence the development of new policies and guidelines in midwifery practice which may lead to trainings for midwives so that they gain knowledge and skills on the upright positions. This may help the midwives to ably assist women who choose the upright birthing positions. Additionally, the midwives will be able to educate the women on the upright positions as well as their effects so that the women should understand and make informed choices. If the women are equipped with knowledge of the upright positions, they may be able to practice and use the positions. Finally, the gaps that will be identified in this study may provide a basis for future research.

Problem Statement

Women in most health facilities of Malawi are given little or no information on the available birthing positions. This has led to most women delivering in the supine positions. Many studies discourage the use of the supine positions during labour and delivery because of their negative effects on the mother, the foetus and the progress of labour. However, women who deliver at home or with traditional birth attendants (TBAs) are free to deliver in their preferred positions, including upright positions. This may make some women to choose the home setting for their delivery thereby offsetting government's effort of ensuring a skilled birth attendant at each birth. If women deliver in their homes, pregnancy related complications such as post-partum haemorrhage, obstructed labour and birth asphyxia may increase. This may consequently lead to a rise in maternal and neonatal mortality rates. This might have contributed to the failure in the attainment of the millennium development goal (MDG) 5 which aimed at improving maternal health.

There is also limited data regarding birthing positions that are used in Malawi. From the literature search, there was scarcity of information for Malawi on awareness of women of birthing positions as well as women's preferences of the birthing positions. The current state of practice of midwives about non-use or inadequate usage of the various birthing positions warranted investigation. It is against this background that this study was conducted.

Objectives

Broad Objective

To **explore** women's awareness of birthing positions and their preference for any particular birthing position

Specific Objectives

- To assess women's knowledge of birthing positions
- To **determine** the positions that women have experienced when giving birth
- To assess midwives practices of birthing positions
- To determine the positions that are preferred by women in relation to what is offered in the health facilities.
- **To determine if there are any associations among the variables: women's demographic characteristics and knowledge of birthing positions; women's demographic characteristics and birthing positions preferences; women's knowledge of birthing positions and birthing position preferences; midwives' experience and birthing positions.**

CHAPTER TWO

Literature Review

Introduction

This chapter will present a comprehensive literature review of studies relating to the birthing positions. The aim of the current study was to explore women's awareness and preferences of birthing positions in Chikhwawa District in comparison to midwives practice. The literature review was embarked on in an attempt to find out what is already known on the topic and to identify any gaps in regards to the context as well as methodologies which were used in previous studies. To be specific, the first section will focus on the search strategy that was used conduct the search. This will be followed by the different dimensions of the topic including the positive and adverse effects of the supine positions, positive and adverse effects of upright positions, women's experience of birthing positions, midwives practices of birthing positions and factors that promote the use of upright positions. Finally, there will be a presentation of the gaps identified in the previous studies as well as the proposed ways in which the present study may address the gaps.

Literature Search Strategy

The first step in the undertaking of the literature search was to identify the main concepts of the research question. This was done using the PEO or PIO (Population, Exposure or Issue, and Outcome) formula. With the aid of this formula, the population of interest was identified as women, the exposure or issue at hand as birthing positions and lastly the outcomes were identified as awareness and preferences. The review did not only concentrate

on the key concepts, but also, it included studies on different designs which were used in previous studies, that is, quantitative and qualitative designs as well as the various research methods such as randomised controlled trials (RCTs), cross sectional studies, systematic reviews and cohort studies.

In order to aid the search, specific key words were identified from the research question which included; “women”; “female adult”; “mothers”; “pregnant women”; “antenatal mothers”; “postnatal mothers”; “birthing positions”; “birthing posture”; “birthing physiology”; “awareness”; “knowledge”; “experience”; “preferences”; “views”; “perceptions”; “decision making”. Furthermore, Boolean operators such as AND, OR and NOT were used to locate relevant studies. Using the Boolean operators, the following search words were generated; “women OR mothers” AND “birthing positions OR birthing posture”; “women’s knowledge AND birthing positions”; “women’s preferences AND birthing positions OR birthing posture”; “women’s knowledge OR awareness” AND “birthing position preferences” , “women’s psychological issues OR perceptions” AND “birthing positions OR birthing posture”; “women’s views AND birthing positions OR birthing posture”; women’s experience AND birthing positions OR birthing posture”; “women AND birthing positions OR birthing posture” AND “knowledge OR awareness”; “women AND birthing positions AND preferences”.

Online databases were used to search for the articles relating to the topic. The databases that were used included Health Internetwork Access to Research and Initiative (HINARI), Google Scholar, Free Full PDF Cochrane Database of systematic reviews, MEDLINE, Pub Med, EBSCO Host and African Journals Online (AFJOL). The review was restricted to

birthing positions for second stage of labour mainly focusing on those articles which were written in English.

Studies on birthing positions for second stage labour of women more than 18 years of age whether pregnant or not were included for review. In addition, studies of midwives' practices as well as those of women's experiences with regard to second stage birthing positions whether at a health facility, birth centre or at home were included in the review to give a comparison between the midwives practices and women's preferences of the birthing positions. This also helped to show the discrepancies that existed in the use of the positions in the different settings. Furthermore, studies on barriers to the utilisation of upright birthing positions by midwives were also included in the review. However, studies on women's knowledge as well as women's preference for second stage birthing positions were limited. In addition, the literature search revealed that there were no studies from Malawi which specifically looked at birthing positions.

An overview of Positions for Second stage of Labour

Positions for second stage of labour can be classified as supine and upright. Supine positions are those in which a line connecting the centre of a woman's third and fifth vertebrae is more horizontal than vertical while upright positions are those in which gravity is involved (Gupta, Hofmeyr, & Shehmar, 2012). Supine positions include dorsal or recumbent, lithotomy, semi-recumbent, lateral or side lying and trendelenburg while upright positions include sitting, kneeling, squatting aided or unaided and standing (Gupta et al., 2012; Thies-Lagergren, 2013). Another position that can be used in the second stage is the hands and knees or all fours position (Thies-Lagergren, 2013).

The second stage of labour is often the most stressful part of the child bearing process to women, their foetus as well as their care givers (Kopas, 2014). In second stage of labour, the decision made by the women and their caregivers regarding birthing positions may influence the outcome of the birthing process (Nieuwenhuijze, Low, Korstjens, & Lagro-Janssen, 2014). World Health Organization (WHO) recommends that in second stage, women should adopt any position and that they should as much as possible avoid the supine positions. Furthermore, it recommends that care givers should be trained to ensure that they are able to assist women in any position so that they should not hamper women's choice of birthing positions (World Health Organization, 1996). In spite of these recommendations, many countries have been slow in adopting this evidence based practice (Shaban et al., 2011) as many births still take place in the supine positions.

For instance, in United Kingdom (UK), 49% of births take place in the semi-recumbent position (Royal College of Midwives, 2010), in United States (US) more than two thirds (68%) of women giving birth in supine position, in India 93% of the women use the dorsal position for birthing (Iyengar et al., 2014) and in other countries such as Jordan, Canada, Kenya, Uganda and Tanzania, almost all women giving birth in hospitals deliver in supine position (Higginbottom et al., 2013; Hodin, 2013; Lavender & Mlay, 2006; Shaban et al., 2011). In Malawi, most women are also seen delivering in the supine positions. Although many countries are still using the supine positions for birthing, some countries have adopted the use of upright birthing positions. For instance in rural areas of Sudan, women are accustomed to kneeling or squatting when giving birth (Higginbottom et al., 2013), in Brazil, 82 percent of the women give birth in semi-sitting position (Silva et al., 2013) and in Sweden about 58% of the women use upright positions including sitting, kneeling, squatting and

standing (Gottvall, Allebeck, & Ekeus, 2007). The next section discusses the positive and adverse effects of the positions.

Supine Positions

It has been purported that the supine position are preferred most by caregivers because when women are in that position, caregivers find it easy to monitor fetal heart rate and uterine contractions. In addition, they are the positions which they find comfortable when palpating the mother's abdomen, cleaning up blood as well as conducting certain procedures such as vaginal examinations and invasive manoeuvres (Gizzo et al., 2014; Gupta et al., 2012; Higginbottom et al., 2013). Another reason for the preference of the supine positions by caregivers is that they are the common positions for delivery which are depicted in midwifery and obstetric textbooks (Gupta et al., 2012; Lugina, Mlay, & Smith, 2004). This implies that if the authors of midwifery textbooks continue to refer to the supine positions as the main positions for birthing, caregiver's will continue to think that they are the only positions which they can use during the second stage . In a way, they will be promoting the use of the supine positions. However, Gupta et al., (2012) argued that the influence that medical personnel and institutions have over the positions adopted by women during labour and birth is inconsiderable of women's needs during childbirth. The authors might have made this allegation on the basis that in doing so the caregivers impinge on the women's freedom of choosing their preferred positions.

Although the supine positions are the most preferred positions, they have many disadvantages. Firstly, when anatomy is taken into consideration, the positions are not efficient for birthing because they make the mother to push uphill against gravity (Thilagavathy, 2012). This may cause exhaustion in the women since they may have to push

forcefully to counteract the effect of gravity. Secondly, the supine positions have been associated with increasing the rate of episiotomies, abnormal fetal heart rate patterns and assisted vaginal deliveries (Gupta et al., 2012). This is supported by Queensland (2012) who found that 43% of women who used supine position for birthing required episiotomy compared to 35% in upright group. Gizzo et al. (2014) further concurred with these findings as their cohort study revealed that all women who laboured in supine position had episiotomies compared to only 32.7% of those who used upright positions. This means that the chance of having an episiotomy in women who use the supine positions is almost 100% compared to 35% in women who use upright positions.

Thirdly, researchers have found that supine position causes abnormal fetal heart pattern. For instance, Gizzo et al. (2014) in their cohort study compared recumbent and alternative positions in terms of labour process, type of delivery, neonatal wellbeing, and intrapartum fetal head rotation. The study revealed that supine position caused abnormal fetal heart patterns in 13.1% of the women compared to 5.1% of those who used the upright position. Similar results were reported by Thilagavathy (2012) who in his randomised experimental study on maternal birthing position and outcome of labour found that the incidence of irregular fetal heart patterns was 7% in women who laboured in supported sitting position compared to 13% in their counterparts who laboured in supine lithotomy position. He further found that Apgar scores of the newborns at 1 and 5 minutes were higher in the supported sitting group compared to their counterparts who used the supine lithotomy position. Adding more weight to this, the study by Queensland (2012) revealed that abnormal fetal heart patterns were higher (7%) in women who used supine position compared to only 3% of those who were in the upright group. Therefore, the incidence of abnormal fetal heart

patterns was 5.1 to 7% in women who use the upright position and about 13% in women who assumed the supine position.

Thilagavathy (2012) further asserted that the supine position increases the risk of women experiencing supine hypotension. This contention was made with his study findings as it was observed that the women who were in the supported sitting position maintained a normal baseline blood pressure (BP) throughout while 17% of the women who laboured in supine lithotomy position had supine hypotension. The presence of supine hypotension might have had a direct relationship with the regular fetal heart patterns that were observed by the researchers since the supine hypotension is associated with causing irregular foetal heart patterns.

It was posited that supine birthing positions increased the rate of instrumental deliveries. This was supported by Nasir, Korejo and Noorani (2007), who in their case control study found the incidence of forceps delivery to be 24% among women who used supine position compared to 11% in women who used squatting position. Correspondingly, the study by Thilagavathy (2012) revealed that the rate of instrumental deliveries by forceps or vacuum was higher (42%) among women who used the lithotomy position than those who used the supported sitting position (8%). Gizzo et al. (2014) further agreed with these findings as they reported from their study that among the women whose babies were in occiput posterior position (OPP) and delivered vaginally, 39.6% of those in supine position required assisted delivery compared to 28% in the upright group. To sum up, the incidence of assisted births among the supine group was 24 to 42% where as it ranged from 8 to 28% among the upright group. Furthermore, the study by Gizzo et al. (2014) revealed that the rate of dystocia was 13% in the supine group compared to 0.7% in the upright group and caesarean section rate

was 46.5% in the supine group compared to 12.3% in upright group of the patients whom their babies were in occiput posterior position (OPP). The next section will examine the positive and the adverse effects of upright positions.

Upright positions for Second stage

Research on birthing positions suggested that upright positions have more advantages when compared to supine position. To start with, upright positions were merited for their ability to increase pelvic diameters. For instance, Simkin (2003) found that squatting and kneeling positions increased the anterior, posterior and transverse diameters of the mid pelvis and the outlet. He further found that the squatting position increased the intertuberous diameter. Similarly, Reitter et al. (2014) reported from their cohort study that the diameters of the pelvis increase in the kneeling squat position regardless of whether one was pregnant or not. In this study, the kneeling squat position increased the transverse diameters to around 0.9 to 1.9 cm, the average bispinous diameter increased by 1.9cm whereas the average bituberous diameter increased by 0.9 cm in both pregnant and non-pregnant groups. An increase in the diameters of the pelvis is paramount as this may help the foetus to negotiate easily through the maternal pelvis since the large diameters of the fetal head can easily fit into the maternal pelvis. This may promote descent of the foetus thereby facilitating the birthing process.

It has been alleged that upright positions reduce the duration of second stage labour. Results of a meta-analysis by Roberts, Algert, Cameron and Torvaldsen (2005) concurred with this allegation as it was reported that the duration of second stage of labour was 109 minutes in upright positions compared to 133 minutes in recumbent position. In a like manner, Thilagavathy (2012) found that the duration of second stage of labour was 56 minutes in women who used the supported sitting position compared to 67 minutes in women who used

supine-lithotomy positions. Adding more weight to this, Thies-Lagergren, Kvist, Sandin-Bojö, Christensson and Hildingsson (2013) found that second stage of labour reduced by 6 minutes in women who laboured on a birth seat compared to those who used semi-recumbent position. Therefore, the duration of second stage can be reduced by 6 to 24 minutes when a woman uses upright positions. This is worthy adopting as some of the complications that result from prolonged second stage of labour can be reduced.

It is presumed that the reduction of second stage of labour in the upright positions is achieved by the effect of gravity which assists in pushing the baby down and out, increases uterine contractility and improves the alignment of the uterus to the pelvic outlet (Gupta et al., 2012). Improved alignment of the uterus to the pelvic outlet may help the baby to get in a better position for it to negotiate through the pelvis thereby facilitating the labour process. Apart from reducing the duration of labour, the woman may not need too much effort to push her baby out hence she may not tire quickly as is the case when the supine position is used. Squatting and sitting positions are good examples of upright positions that may help when the second stage is prolonged or when expeditious birth is indicated (Kopas, 2014).

Evidence also suggests that upright birthing positions relieve the pain that women experience during the second stage. According to a study by Berghella, Baxter, and Chauhan (2008), women who laboured in upright positions such as sitting and standing experienced less pain compared to those who laboured in supine positions. Along the same line, results of a study by Lawrence, Lewis, Hofmeyr and Styles (2009) revealed that upright positions reduced the need for pharmacological pain relief measures. Furthermore, Thilagavathy (2012) reported from his study that the likelihood of having reports of severe pain during the second stage of labour was only 16% among women who used the supported sitting

position compared to 58% among women who were in the lithotomy position. In terms of the Visual Analogue Pain Scale, he found that the mean intensity of labour pain score was lower (80 mm) among the women who were in the supported sitting group compared to 92mm in those who used the lithotomy position. Regarding this, some authors have found some upright positions to be more effective in relieving pain over others. For instance, kneeling position has been associated with lesser pain when compared to the sitting position (Berghella et al., 2008). Given these points, midwives have a task of ensuring that the women experience much less pain by allowing the women to assume positions of their choice whilst recognising that this can only be achieved if the women are well informed and involved in decision making.

Albeit the many advantages, the upright positions also had some disadvantages. The first disadvantage was that they increased the risk of blood loss. The study by Berghella et al. (2008) supported this as it was found that upright positions such as sitting, kneeling and squatting had higher rates of blood loss of more than 500mls when compared to supine positions. Similarly, De Jonge, Van Diem, Scheepers, Van Der Pal-de Bruin and Lagro-Janssen (2007) found that the risk of losing blood more than 500 ml to 1000 ml was greater in sitting position than in recumbent position (De Jonge et al., 2007). Although the upright positions were associated with increased blood loss, the postulates of this attributed the increased blood loss to perineal damage, venous congestion of the vulva which occurs when bearing down takes place against a rigid surface and also because of the ease with which blood collects when women assumed an upright position (Berghella et al., 2008; De Jonge et al., 2007; Gholitabar, 2009). This was an important finding as it pointed out to midwives that

they should be cautious with women who sustained tears during delivery. Therefore, it could be wise to change the position in the third stage in order to minimise the blood loss.

Another disadvantage of upright positions was the risk of tearing. Upright positions increased the risk of second degree tears (Gupta et al., 2012; Lavender & Mlay, 2006) and labial tears (De Jonge, Van Diem, Scheepers, Buitendijk, & Lagro-Janssen, 2010). On the contrary, results of some studies presented a different view altogether. For instance, Nasir, Korejo and Noorani (2007) reported from their study that women who laboured in non-upright position had extension of episiotomies while those who used squatting position did not have extension of episiotomies. In the same manner, Gottvall et al. (2007) found that the rate of anal sphincter tears was slightly higher (6.9%) among women who delivered in lithotomy position compared to 6.4% of women who delivered in squatting position. Adding more weight to this, Terry, Westcott, O'Shea and Kelly (2006) in their non-randomised clinical trial which compared supine and non-supine positions, including sitting, squatting, kneeling and hands-and-knees, reported similar findings. Their study revealed that 60% of the women who delivered in the non-supine position had an intact perineum compared to 22% of the supine group. In addition, they found that 30% of those in the non-supine group sustained first-degree tears whereas 67% of women in the supine group sustained more severe lacerations. Further, the incidence of second and third degree lacerations was 8% and 2% in the non-supine group compared to 52% and 13% in the supine group respectively while the incidence of fourth degree lacerations was 2% in the supine group and there was none in the non-supine group. Finally, they reported a non-clinically significant incidence of vulval oedema among the non-supine group whereas those in the supine group developed first to fourth degree cases of vulval oedema. With these divergent views, one can conclude that in

any position, whether supine or upright, the risk of tearing still exists. However, considering the other advantages of the upright positions, it may be fair enough to encourage women to use them. The next section discusses the experience of women with the different types of birthing positions.

Women's Preferences and Experiences of Birthing Positions

It has been suggested that a good or bad experience with certain positions during birth influenced women's choice during their next delivery (De Jonge et al., 2008). Key factors that contributed to women's positive birth experience included having the freedom to move about and change positions as well as the ability to give birth in the preferred position (Hardin & Buckner, 2004). This meant that if a woman had a good experience with a particular position, they were likely going to choose the same position during their next delivery and those with a bad experience would choose another position if there were no hindering factors. According to De Jonge and Lagro-Janssen (2004), women varied in their experiences with some preferring the supine position and others upright or lateral positions.

Albers, Sedler, Bedrick, Teaf and Peralta (2005) concurred with this allegation as they found that four out of five women used sitting position when giving birth, 9.7% lied flat with stirrups, 7.4% used lateral recumbent, and less than 1% each for squatting, hands and knees, or standing. Similarly, Gottvall et al. (2007) reported from their study that 42% of the women used sitting, 21.1% lithotomy, 11.6% kneeling, 8.5% supine, 8.0% lateral and 2.7% semi-recumbent position. Very few women gave birth in standing (1.2%), birthing stool (1.5%) and squatting (1.8%) positions. Conversely, the listening to mothers III survey by Declercq, Sakala, Corry, Applebaum and Herrlich (2013) revealed that 68% of women who gave birth vaginally reported that they used supine position during the second stage, 23% gave birth in

semi-sitting position and much smaller proportions gave birth either on their side (3%), squatting or sitting (4%), or in a hands and knees position (1%). In the same line, Nieuwenhuijze, Jonge, Korstjens and Lagro-Jansse (2012) explored women's preferences with regard to birthing positions during second stage of labour, with a special focus on women who preferred positions other than common supine positions. The study revealed that 58.9% preferred supine positions, 19.6% preferred other positions such as sitting or standing and 21.5% had no distinct preference. Additionally, he found that women who preferred the supine positions gave birth in these positions more often than women who had preferences for other positions. Furthermore he found that amongst the women who had the preference for the other positions, the actual fulfilment of their preference related to longer duration of second stage of labour, higher levels of education, the strength of the preference and giving birth at home. Correspondingly, a study by Okonta (2012) revealed that 95.9% of women preferred the supine position for child birth and the least preferred position for child birth was the sitting position (0.8%). The squatting position and the kneeling on hands and knees were preferred by 2.0% and 1.3% of women respectively. The overwhelming preference for the supine position could be attributed to the women's lack of knowledge of the upright positions. The study by Okonta (2012) supported this as it was reported that only 30.9% of the women knew more than one position for childbirth whereas 69.1% knew only one position for child birth. The supine position was known by 99.2% of the women, squatting by 42%, sitting 28% and kneeling on hands and by 4.6%. Therefore, midwives have a great responsibility to inform the women about the different positions since the women can only request for the positions which they are aware of.

It was purported that when women requested for specific birthing positions, they mostly requested for vertical positions such as squatting or sitting and on few occasions they requested for semi-recumbent positions (Nieuwenhuijze et al., 2014). The review of the literature suggested that one of the factors which influenced women's preference for upright positions was the comfort they found in the positions. Gayeski and Brüggemann (2009) concurred with this as their study revealed that women experienced less pain in the upright position. Additionally, Miquelutti, Cecatti and Makuch (2013) reported that women preferred upright positions because the positions permitted pelvic mobility, were comfortable for massage, helped to relieve pain and to relax the lumbopelvic region. Furthermore, they reported that women considered horizontal positions as being less comfortable since the positions hampered their mobility and increased the sensation of pain during contractions. Although the women expressed that upright positions were comfortable, they were not usually offered by the midwives in the facilities. An Iranian qualitative study explored parturient needs, values and preferences during normal labour and delivery. The study revealed that one of the things that the women required was physical comfort such as ambulation, walking, and changes of positions. Nevertheless, this was not fulfilled as the midwives insisted that the women should use the supine position (Iravani, Zarean, Janghorbani and Bahrami, 2015).

Positive birth experiences relating to birthing positions were also reported by women who delivered at home. This was supported by Hodin (2013) and Sychareun et al. (2012) as it was reported from their study that position of delivery was fundamental in women's preference for home delivery because they were free to use different positions such as sitting, kneeling, and squatting in order to facilitate the birthing process. On the contrary, they reported that regardless of their instincts for upright positions, the women used supine

positions when they had a hospital delivery (Hodin, 2013). In line with this, ethnographic and qualitative studies by El-Nemer, Downe and Small (2006) and Sychareun et al. (2012) in their respective order, revealed that midwives at health facilities forced the women to lie on their backs with their legs raised and widely parted or opened, and their feet strapped in stirrups when giving birth. However, De Jonge and Lagro-Janssen (2004) argued that women did not like the supine position as it made them to feel embarrassed since unfamiliar people who entered the delivery room looked straight into their vagina. Similarly, Saravanan, Turrell, Johnson and Fraser (2010) reported that women were concerned over the use of the lithotomy position because it made them feel exposed, humiliated and their desire for privacy was violated. Furthermore, Bohren et al. (2015) found that some women in their study preferred to use squatting or kneeling positions because the supine position was undesirable and it made them to be passive. Considering these allegations, it would not be surprising if women opted for upright positions as well as home delivery.

Other benefits that influenced women's preference for upright positions were reported by Gayeski and Brüggemann (2009) in their qualitative study which examined the perceptions of puerperal women regarding their experiences in vertical and horizontal deliveries. In this study, the women reported that delivery in squatting position was faster and required less effort than in the supine position. Additionally, they reported that the upright position increased their participation in the birthing process and they were able to visualise what was happening during the birthing process. Furthermore, they reported that postpartum recovery was better in the vertical position because they were not given an episiotomy unlike in supine position where they were cut and sutured. In spite of these positive aspects, some women were dissatisfied with the upright position because their legs became numb and also because they

did not know how to get into the position. By contrast, positive aspects of the horizontal position were characterized by interventions, in particular, performance of an episiotomy and a feeling of being helped. On the other hand, the women reported that the negative aspects of the supine position included making the birthing process longer, increasing the risk of being sutured as a result of an episiotomy and inability to visualise what was happening since their legs were raised and as such this obstructed their view.

Another important factor which influenced the positions used by the women was the advice given by midwives. This was supported by De Jonge and Lagro-Janssen (2004) as the women reported using the lithotomy position because their midwives said that it was the best or safest position or because they had some complications such as foetal bradycardia and labour that was not progressing. In addition, some women reported that they assumed the supine position to give chance for the midwives to examine them. Furthermore, some women reported that they followed midwives' instructions to assume the supine position because it corresponded with the information they got from antenatal classes, the media as well as other women's stories (De Jonge & Lagro-Janssen, 2004).

The positions which were used by the women affected their sense of being in control (Borders, Wendland, Haozous, Leeman, & Rogers, 2013). This control was interpreted as having decision making power, stating their preferences, asking questions about suggestions made by care providers regarding positions (Bibeau, 2014), being able to control their bodies during labour (Hardin & Buckner, 2004) and assuming an upright position (De Jonge & Lagro-Janssen, 2004). Results of a randomised control trial by Thies-Lagergren (2013) concurred with this as it was revealed that women who gave birth on a birth seat expressed that they felt more powerful, strong, safe, secure, comfortable, protected and self confident to

a higher degree than those who used the supine position. Bohren et al. (2014) further supported this as their systematic review revealed that women feared undesirable birth practices in health facilities such as unfamiliar birthing positions and preferred to deliver at home in order to retain their control over the birthing positions. The next section discusses the birthing positions in regards to midwives practices.

Midwives' Practices of Birthing Positions

The use of birthing positions by midwives was facilitated by several factors. To start with, lack of exposure on use of upright positions among midwives contributed to midwives inability to offer or use them in their practice. According to Bohren et al. (2015), the lack of exposure was attributed to the nature of training the midwives had attended since they only learnt about delivering women in supine position. As a result, they could not offer the upright positions to women who preferred them since they could not manage to use them. In the same vein, Lugina, Mlay and Smith (2004) conducted an exploratory study where they explored midwives views on the barriers and opportunities to implementing evidence-based obstetric care in African countries using focus group discussions. The results of the study revealed that midwives were not conversant with the upright positions because the supine position was the only position which was used for delivering women in their facility as such they only had the expertise to deliver women in supine position. Additionally, they reported that they were taught to conduct deliveries in the supine position and hence it was difficult for them to use other positions. Consequently, it was difficult for them to change their practice without having any practical experience on the use of the non-supine positions.

Secondly, personal traits of the midwives affected their use of birthing positions. In particular, the traits included the extent to which one was used to the medical model of care

where supine was the only position for birthing, the positions which they considered to be natural, their self confidence in trying out new practices and their own labour experience (De Jonge et al., 2008). This implied that the midwives who worked in facilities where upright positioning was not part of the practice would have problems to use them while those who worked in facilities where upright positions were practiced would comfortably promote and use them. Similarly, if one considered that it was normal for a woman to deliver in non-upright position or if they had not seen anyone delivering in the upright position, it would be difficult for them to offer the positions to women. In addition, the midwives did not want to use the upright positions because of fear. In support of this was a phenomenological study by Edqvist, Lindgren and Lundgren (2014) which examined midwives' lived experience of a birth where the women suffered an obstetric anal sphincter injury. In this study, the midwives reported that they were afraid that use of upright position would result into anal sphincter injury which would separate the women from their babies and their partners at the time the injury would be repaired. In addition, they were worried about the long term consequences of the injury such as anal incontinence. Besides this, the midwives were concerned that it would be a professional failure and their colleagues would judge them as incompetent if a woman sustained an anal sphincter injury. Consequently, they were forced to change the women's positions from upright to supine so that they could perform episiotomies more especially if a tear was imminent. Nonetheless, it was noted that the anal sphincter injuries still occurred albeit these preventive measures, hence giving an indication that the upright positions could still be used.

It was also purported that midwives used birthing positions for their own convenience. Lugina et al. (2004) in their exploratory study using quantitative and qualitative methods

explored the barriers and opportunities to implementing evidence based obstetric practice from providers' perspective. They reported from their study that midwives used supine position because it enabled them to view and control all activities of the birthing process and they easily performed certain procedures, for instance, episiotomies. In addition, the supine position enhanced non-verbal communication between the midwives and the women as such they were able to observe the women's facial expressions which helped them understand the women's condition and how they were responding to the labour process (Lugina et al., 2004).

Correspondingly, the study by De Jonge et al. (2008) which explored the views of midwives on women's positions during the second stage of labour revealed that some midwives did not inform the women about certain positions because of their own conditions, for instance pregnancy, which would make them uncomfortable to help the women in the upright positions. The midwives also reported that they had a better view of the perineum and it was easy for them to conduct a delivery in the position. In addition, other midwives preferred to perform an episiotomy or vaginal examination in supine position and this eventually led to supine birth. Furthermore, it was reported that some midwives deliberately performed some tricks to let the women give birth on the bed by asking them to lie down for a vaginal examination and this eventually led to the women delivering in the supine position

Lugina et al. (2004) in their exploratory study reported that some midwives supported the women to adopt a more upright position if the women had problems that warranted such positioning, for instance, difficulties in breathing or high blood pressure. De Jonge et al. (2008) concurred with this as they reported from their study that when the midwives anticipated some problems such as blood loss and neonatal distress, they changed the women's position from upright to supine because they found it easier to deal with the

conditions in that position. Similarly, if they anticipated vulval oedema, they changed the women from a birth stool to standing or recumbent position. They further reported that problems such as lack of labour progress, pain, discomfort or restlessness also necessitated changing the women's position. For instance, if labour was precipitated, they used the recumbent position to control it and if it was slow they used upright positions as an intervention. Additionally, if the women had intense pain, they were also advised to adopt upright position to relieve the pain (De Jonge et al., 2008).

Another barrier to the use of upright positions by the midwives was the safety of the woman and her baby. The midwives reported that they were afraid that it would be difficult for them to manage the women if certain conditions, such as eclampsia, arose whilst in the upright position. Additionally, other midwives reported that they feared that women would drop their babies down when left to deliver in upright position (Lugina et al., 2004). This lack of confidence in the use of upright positions indicated that there was a gap in midwifery practice that needed to be filled.

Factors That Promoted the Use of Upright Positions

There were several factors that promoted the use of upright positions by the women. To begin with, simple innovations such as use of readily available resources and equipment were useful for positioning women in upright position. Thilagavathy (2012) concurred with this as he suggested that simple resources such as backrests and pillows could be used to elevate the back of the labouring women so that they should deliver in upright positions. In tandem with this, Jenkinson, Josey and Kruske (2014) proposed that furniture and equipment such as birth stools, birth balls, ropes, and upright chairs should be used to encourage and support women to adopt non-supine positions.

Giving women adequate information about what is happening to them and offering them options about position changes helped the women to take control over their birth (Bohren et al., 2015), to be fully involved in decision making and to be supported throughout their labour (Kenyon, Ullman, Mori, & Whittle, 2007). Good communication by the providers was also vital as it improved the women's psychological wellbeing after giving birth (Kenyon et al., 2007). Providers should therefore refrain from directing the women on what to do, but rather they should motivate the women by providing them with the information they need to experience their labour without problems (Borders et al., 2013). For instance, instead of directing the women on the positions, they should inform the women on the available options from which the women can choose their preferred positions. Different modalities can be used to give this information.

Educational activities aimed at preparing women for labour could promote the use of various birthing positions by the women. Miquelutti, Cecatti and Makuch (2013) conducted a qualitative study in Brazil with the aim of describing the experience of labour as described by nulliparous women who participated and who did not participate in a systematic Birth Preparation Program (BPP). As part of the program, some of the information the women received was on the physiology of labour and pain relief techniques. The study revealed that the women assumed different upright positions and changed positions basing on how they were feeling and on what they had learnt during the preparation. All the women who participated in the systematic educational activities of the BPP reported that they maintained control for most or all the time during labour. They also reported that they used upright positions as one of the non-pharmacological pain relief measures, assumed the positions without any problems and gained confidence in the effectiveness of the positions as labour

progressed. In addition, they reported that they were satisfied with their labour. Conversely, the women who did not participate in systematic educational activities of preparation reported that they had problems in maintaining control during labour and almost half of them reported that they lacked control. Additionally, some of them reported that they were not satisfied with their birthing experience because pain was excessive. Further, they reported that with the guidance of staff in the labour room, they began to use some upright positions which brought them some comfort and relief from pain. However, they were quick to say that they could not adopt or change the positions without seeking guidance from the staff. This shows the effectiveness of birth preparedness program in promoting the use of upright positions. Midwives should therefore include information on birthing positions in the birth preparedness programs so that women should make informed choices.

In the same vein, De Jonge et al. (2008) reported from their study that giving women informed choice of the birthing positions helped them to choose from the available options. In this study, informed choice was defined as actively giving the women a choice in birthing positions and taking control whenever there was an obstetric indication, for instance, failure to progress, or if the women could not make choices for themselves for some reasons. The study revealed that midwives' behaviours which corresponded to giving women informed choice included giving women information about position options, letting women's preferences to prevail over their own, encouraging the women to trust their instincts in finding comfortable positions and being prepared to try positions requested by the women. For instance, it was reported that the midwives' practice of giving women informed choice for birthing positions during an information evening allowed the women to use positions of their preference. Midwives can adopt this practice and they can take advantage of the health talks which are

conducted in antenatal clinics, labour and delivery wards to teaching women about the birthing positions. The midwives can also give this information to the women during individual counselling sessions.

Nieuwenhuijze et al. (2014) conducted a study in United States (U.S) which explored how maternity care providers communicated with women regarding birthing positions during the second stage of labour. The study revealed that the role of maternity care providers (MCPs) was significant in enabling women to consider choices regarding the use of various birthing positions. The MCPs were responsive to women's requests about certain birthing positions, they provided alternative positions if the women were uncomfortable with their chosen position, they taught the women how to use certain positions, they showed empathy and acknowledged the women's emotions and the hard work they performed when giving birth. They further observed that there was almost non-verbal interaction for the providers who did not involve the women and mostly the women used the supine position. This signifies the importance of communicating with women during the second stage of labour as this may enhance their participation in the birthing process. As such, they may be able to express their preferences for the birthing positions.

Kongnyuy, Mlava and Van den Broek, (2009) conducted a study in Malawi with the aim of assessing and improving women-friendly care in maternity units using criteria based audit. The audit involved establishing standards for women friendly care, measuring practice, analysing findings and giving feedback, recommending and implementing change, and re-auditing standards to assess progress. The results revealed that criterion based audit improved the rate at which the women were informed about birthing positions by the midwives from 68.6% to 79.3% and the ability to allow women to adopt position of their preference from

67.9% to 83.4%. This is one of the evidence based practices that midwives can adopt to enhance the use of the upright positions by the women.

Another initiative that promoted the use of alternative positions for delivery was the Approche PosturoRespiratoire de Bernadette de Gasquet (APOR B) method established by a French physician, Dr Bernadette de Gasquet. The APOR B method offers a holistic approach by promoting mobilization and suggesting different positions for pregnancy, labour, and delivery. The APOR B method allows women to adopt positions and alter their posture according to their comfort and clinical situation for instance fetal positions, asynclitism, altered fetal heart rate and localization of pain. Suggested positions to be adopted include lateral, hands and knees, squatting, ventral, or dorsal positions (Maheux-Lacroix et al., 2013).

Jenkinson et al. (2014) also recommended the use of visual aids such as posters to illustrate birthing positions as this can encourage women to be more active and to try different positions during labour. Simple posters can therefore be placed in strategic areas of the delivery room so that the women should see the different types of birthing positions so that they can choose them at the time of their delivery.

Conclusion

Based on the literature review, it is evident that upright positions have more positive effects than supine positions. The positive effects are to the mother, the unborn baby as well as on the progress of labour. The literature has also revealed that some traditional practices are beneficial to the midwifery practice because they promote natural birth and incorporate scientific principles in the birthing process making the labour process faster, less painful and promoting better outcomes. It is therefore important for midwives to incorporate such

practices in their care for the women as this can reduce some obstetric problems such as prolonged second stage of labour, foetal distress, the pain that women experience as well as making the women to feel in control of their labour. The literature has also revealed that some women may choose to deliver at the home if they are not allowed to choose their preferred birthing positions. The problem of not allowing women to choose other birthing positions or not giving the women information on other birthing positions emanates, to some extent, from midwives lack of knowledge and expertise on upright birthing positions among other factors. Midwives must therefore be equipped with the necessary knowledge and skills for them to be able to inform the women about the upright positions. Additionally, the environment in which the deliveries are conducted should suit the needs of the women. For instance, simple resources, equipment and furniture should be made available to allow for positioning of the women in upright position.

Having presented the above literature, it can be noted that a wide range of literature on birthing positions exists. Most of the studies on birthing positions were conducted in the Netherlands and other countries. However, the literature search revealed that there were no studies on birthing positions that were specifically conducted in Malawi. Most of the studies focused on assessing the effects of the birthing positions on maternal and foetal health as well as the progress of the labour. Additionally, most of the studies were randomised controlled trials which compared the effects of the different types of the birthing positions. Furthermore, only a few studies investigated the knowledge that women have as well as their preferences for birthing positions. Therefore, there is need to conduct a study in Malawi to assess the awareness of women in terms of the birthing positions and also to determine their preferences for any particular positions.

CHAPTER THREE

Methodology

Study Design

A descriptive cross-sectional study design using quantitative research methods was used to conduct the study. Cross sectional research design provides the researcher with a picture or a snapshot of what might be happening in a sample or population of people at a particular time (Maltby, Williams, McGarry, & Day, 2014). This design was suitable for the research topic because the researcher wanted to find out what was happening in the population of interest in terms of the birthing positions since there was inadequate information about this.

Study Site

The study was conducted at antenatal clinics, postnatal and labour wards of Chikhwawa District Hospital (CDH), St Montfort Mission Hospital and Mfera Health Centre in Chikhwawa District. Chikhwawa District Hospital was chosen because it is the main referral hospital for the District, St Montfort because it is a mission as well as paying hospital and Mfera HC represented the health centres in the district.

Study population

The study recruited women aged between 18 and 50 years having at least a second pregnancy or second birth who were attending antenatal clinic and postnatal services following a normal delivery. These women were chosen because they might have used or heard about maternal birthing positions hence they would inform the researcher on the subject matter. Additionally, the study recruited midwives who were working in the labour wards of

the selected three facilities because they would provide a picture of the practices that took place in the facilities.

Sample Size

All midwives who were working in the labour wards of Mfera Health Centre (HC), Chikhwawa District Hospital (CDH) and St Montfort Hospital during the study period were recruited for the study. For Mfera HC three midwives were observed while eight midwives were observed for CDH and nine midwives for St Montfort Hospital. For the women, the sample size was supposed to be calculated based on the proportion of women that gave birth in the year 2013 to those that used a specific position of interest. In total, Chikhwawa District had 14, 625 deliveries for the year 2013. Out of this figure CDH had 3, 013, Mfera HC 524 and St Montfort hospital 2, 296 deliveries. However, the specific positions used by the women were not known because this information is not captured in the registers. Since the number of women using specific positions was not known, the proportion was estimated at 50%. The sample size was thus calculated as follows:

$$n = \frac{Z^2 P(1-P)}{e^2}$$

n = Population sample

Z = Value of a standard normally distributed variate which for a 95% confidence interval takes the value of 1.96

P = Proportion of women using a specific position of interest (50%)

e = Allowable error 6% (0.06)

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.06^2}$$

$$= \frac{3.8416 \times 0.5(0.5)}{0.0036}$$

$$= \frac{0.9604}{0.036}$$

$$= 266.78$$

$$N = 267$$

∴ Sample size is 267

To determine sample size for each facility, ratios were used.

The ratio = Number of deliveries for Mfera HC: Number
of deliveries for CDH: Number of deliveries for St
Montfort Hospital

$$= 524: 2296:3013$$

$$= 524+2, 296+3, 013$$

$$= 5, 833$$

$$\text{Sample size for Mfera HC} = \frac{524}{5833} \times 267$$

$$= 23.99$$

$$= 24$$

$$\text{Sample size for CDH} = \frac{3013}{5833} \times 267$$

$$= 137.91$$

$$= 138$$

$$\text{Sample size for Montfort Hosp} = \frac{2296}{5833} \times 267$$

$$= 105.1$$

$$= 105$$

Therefore the sample size for Mfera Health Centre was 24, Chikhwawa District Hospital 138 and St Montfort Hospital 105

Sampling Method

Participants for the study were recruited using simple random sampling method. Simple random sampling allows each element of the population an equal chance of selection (Weisberg, 2009). The researcher did simple random sampling without replacement to prevent the selected numbers from being selected twice or more. The researcher assigned consecutive numbers from 1 to 14,625. Then, random number tables containing a list of random numbers were created. The 267 random numbers were then selected from the random number tables.

Inclusion criteria

The study participants were women aged 18 to 50, having at least one delivery and attending antenatal and postnatal services. In addition, it recruited midwives who were working in the labour wards of Mfera HC, CDH and St Montfort Hospital during the study period. Further, the participants who were recruited were those who willingly accepted to participate in the study and those who were fluent in Chichewa or English.

Exclusion Criteria

The study excluded women with delivery complications such as vacuum extraction, retained twin, retained placenta and women who delivered by caesarean section in their first or all pregnancies. The study also excluded women who were having a first pregnancy or first

birth. Besides this, all midwives who were not working in the labour wards of the selected facilities were excluded from the study.

Data Collection

In order to strengthen the study results, there was triangulation of data sources as well as method of data collection. The data was collected from two different sources, that is women and midwives. The data was also collected using two different tools, an interview schedule for the women and an observation checklist for the midwives. The women were asked some knowledge questions of the positions which are used in health facilities. This information was verified by observing the practices of the midwives. The practices of midwives also gave a picture as to whether the midwives offered the women their preferred positions or not.

Data Collectors

The data collectors for the study included the researcher and three research assistants. The research assistants were mature midwives with at least five years experience in midwifery. The research assistants were trained for two days for them to get familiar with the interview schedule and the observational checklist.

Data Collection Tools

The data from the women was collected using interview schedule while that of midwives was collected using a checklist. In order to develop the tools, the researcher undertook literature review which helped in understanding the problem under study. Secondly, the content from the literature was transformed into statements and questions for the tools. The study objectives also guided in dividing the data collection tools into

sections. For instance, this led to division of the women's interview schedule into the following sections; demographic characteristic, knowledge of birthing positions, knowledge of the benefits of upright positions, experience of birthing positions and preferences for birthing positions. On the part of the observation checklist, the sections were divided as follows; background information, guidelines and protocols, and positions used during delivery. In addition to this, method of analysing the data was also taken into consideration during the development of the tools. This helped to predetermine the type or format of questions to be included as well as the appropriate scales of measurement that could easily be analysed using the data analysis software that was selected.

Recruitment Process

On the first day of data collection, the researcher informed the facility and departmental in-charges about the commencement of data collection. Then the researcher went to the antenatal clinic, labour and postnatal wards where the women and the midwives were identified. At the first contact, the researcher greeted the participants and introduced themselves. For the midwives, they were given information about the study verbally and also through the study information sheet. After they had read the information sheet, they were asked if they were interested to participate in the study. Upon their agreement to participate in the study, consent was obtained to proceed with the observations. This was followed by signing of a consent form to confirm their acceptance to take part in the study. Then the researcher went on with the proceedings of the study.

On the part of the women, they were given oral and written information about the study depending on their literacy level. This ensured that they understood the objectives as

well as the procedures involved in the study. This was followed by an invitation to participate in the study. Once they had accepted to participate in the study, consent was obtained to conduct the interview and they were asked confirm their acceptance by signing a consent form. After obtaining the consent and meeting the study criteria, the researcher proceeded to interview the women.

Data Collection Process

The data collection began with midwives observations. The researcher worked with the midwives for two to three days before starting the observations. This made the midwives to get used to the researcher and to start working normally without changing their practices. Each midwife was observed while conducting a delivery using a checklist. In cases where the midwife used multiple positions during the observation, the observation was supposed to be repeated to check if the midwife would be consistent on the use of the observed positions. This was followed by the women's interviews which were administered using interview schedules comprising closed and open ended questions. The interviews were conducted in a private room within the wards or clinics in which the research was carried out. The interviews were conducted in Chichewa for easy understanding of the participants and the data was recorded through writing. The interviews lasted for 20 minutes to 45 minutes.

Data Management and Analysis

Data Management

The interview schedules and observation checklists were reviewed at the end of each data collection to make sure that they were complete and accurate. If there was any missing information, it was re-collected and verified with the participants. The completed data

collection tools were sealed in envelopes and kept in a lockable cabinet to make sure that the data was well secured. **In terms of open ended questions in both of the tools, the responses were coded for easy entry into the data analysis tool.**

Data Analysis

The data that was collected was analysed using SPSS version 20.0. The following variables were included for the analysis; age, parity, maternal positions, women's preferences, women's knowledge, midwives experience and midwives practices of birthing positions. Descriptive statistics for the variables were computed and the results were presented in form of means and frequencies. Associations between the women's demographic characteristics and knowledge of birthing positions; women's demographic characteristics and birthing position preferences; women's knowledge and birthing position preferences; midwife experience and birthing positions were established using a Chi-square test at 5% level of significance. The null hypotheses tested were that there is no association between the pairs of the variables.

Validity and Reliability of the Research

Validity refers to how closely the observed or measured state of affairs aligns with reality (Mulhall, 2008). It is concerned with the degree to which an instrument measures what it is supposed to measure (Polit & Beck, 2010). Content validity for this study was established through consultation with midwifery **as well as research and statistics** experts who assisted in reviewing the content as well as the structure of the tools. This ensured that the tools were sufficiently representative, relevant and comprehensive in collecting the required data. In addition, validity was enhanced through the use of information obtained from literature. Reliability is about consistency and dependency of a measure if the research is repeated over

time in the same context with similar population (Graham & Bond, 2008). Reliability has been enhanced by offering adequate details of the definitions of constructs or variables as well as the procedures employed to collect and analyse data. Furthermore, reliability was enhanced through piloting of the data collection instruments with subjects who were not included in the sample. The pilot was also conducted at Ngabu Rural Hospital which also was not one of the study sites. This helped to check for any errors in the questions. This led to modification and replacement of some questions and even addition of some questions.

Ethical Considerations

Some ethical procedures were followed to ensure that the study participants were protected from exploitation. Ethics is a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit & Beck, 2010). In order to ensure that ethical issues had been considered, the first thing was to have the research proposal reviewed by the College of Medicine Research and Ethics Committee (COMREC) which approved it before data collection was initiated. Secondly, permission to conduct the study at the three facilities was sought from the District Health Officer for the government facilities and Hospital Director of St Montfort Hospital.

Additionally, the study respected human rights for the women as study participants with much emphasis on the rights to self-determination, privacy, anonymity, confidentiality, fair treatment and protection from any harm. This was done by giving them detailed information on the aim of the study, duration of interviews, data collection methods and procedures and relevance of the research study to health care consumers in Malawi and worldwide. They were also assured that the data would be treated with strict confidentiality and that their identity

would not be disclosed in the final report or publications. Following this, they were informed that their participation in the study had no direct benefits but that it would help in informing the midwifery practice. They were also informed that they were free to withdraw from the study at any stage or stop an interview or choose not to answer a question whenever they felt like doing so. Further, they were informed that their refusal to participate in the study would not affect their access to health care services at the study facilities. Moreover, they were informed that there were no risks involved if they participated in the study and that if they felt that their right had been violated in any way, they were free to contact the chairperson of COMREC for assistance. Finally, the participants signed a consent form to show their willingness and acceptance to participate in the study.

CHAPTER FOUR

Study Results

Introduction

This chapter will present the results of the study on women's awareness and preferences for birthing positions in Chikhwawa District. The aim of the study was to determine women's awareness of birthing positions and their preferences for any particular birthing position. The objectives for the study were to assess women's knowledge of birthing positions, to explore the positions that women have experienced when giving birth, to assess midwives practices of birthing positions and to determine the positions that are preferred by women in relation to what is offered in the health facilities. The null hypotheses for the study were that there is no relationship between women's demographic characteristics and their knowledge of birthing positions; women's knowledge of birthing positions and birthing position preferences; midwives experience and birthing positions. The presentation of the results has been organized in such a way that it will first describe the study participants after which will follow their demographic characteristics, then the results according to the objectives of the study and finally the results according to the null hypotheses for the study.

Participants for the Study

In total, the study recruited 284 participants of which 267 were women while 17 were midwives. The study intended to recruit 20 midwives but three did not participate because they were not available during the study period. The women who were recruited were those who accessed services at Chikhwawa District Hospital (CDH), St Montfort Hospital and

Mfera Health Centre (HC) at the time the study was conducted. In the same manner, the midwives who were recruited were those who worked in these facilities at the time the study was conducted. Fifty two percent (n=138) of the women who were recruited were from CDH, 39% (n=105) from St Montfort Hospital and 9% (n=24) from Mfera Health centre. Forty one percent (n=7) of the midwives who were recruited were from CDH, 41% (n=7) from St Montfort hospital and 18% (n=3) from Mfera Health Centre. All the participants voluntarily participated in the study. The women were interviewed using structured questionnaires while the midwives were observed on their practices during the second stage of labour.

Demographic Characteristics of the Women

The women came from 129 villages of seven traditional authorities (TAs) of Chikhwawa District namely; Kasisi, Mlilima, Katunga, Maseya, Lundu, Ngabu and Makhwira. Majority of the women came from TA Lundu (29.2%; n=78), while those in minority were from TA Makhwira (1.1%; n=3). The age of the women in this study ranged from 18 to 48 with a mean age of 28.79 and standard deviation (SD) of 5.4. The youngest age group was 18 to 20 and the oldest age group ranged from 41 to 50. Majority of the women belonged to the age groups of 21 to 30 (56.9%; n=152) and 31 to 40 (37.1%; n=99) while those in minority belonged to the age group of 41 to 50 (1.1%; n=3). In terms of their educational level, the study revealed that the highest educational level for the participants was tertiary (1.9%; n=5) and the lowest was no formal education (15.7%; n=42). Majority (67.8%; n=181) of the women had attained primary school level of education, few women (14.6%; n=39) had secondary school level of education and only 5 (n=1.9%) women had tertiary education. In regard to their socio-economic status, majority were farmers (52.8%; n=141) and only 3.7% (n=10) were employed. In terms of their parity, it ranged from two to five or

more. Majority (45.7%; n= 122) of the women had two children and only few women (10.1%; n=27) had five or more children. A summary of the demographic characteristics of the women is shown in Table 1.

Table 1

Demographic Characteristics of the Women (n=267)

Demographic Variable	Frequency	Percentage
Location		
Kasisi	39	14.6
Mililima	23	8.6
Katunga	64	24.0
Maseya	36	13.5
Lundu	78	29.2
Ngabu	24	9.0
Makhwira	3	1.1
Age range		
18-20 years	13	4.9
21-30 years	152	56.9
31-40 years	99	37.1
41-50 years	3	1.1
Educational Level		
No formal education	42	15.7
Primary (Standard 1-5)	85	31.8
Primary Standard 6-8)	96	36.0
Secondary	39	14.6
Tertiary	5	1.9
Occupation		
House wife	83	31.1
Farmer	141	52.8
Self employed	33	12.4
Employed	10	3.7
Parity		
Two	122	45.7
Three	66	24.7
Four	52	19.5
Five or more	27	10.1

Demographic Characteristics of the midwives

The age of the midwives ranged from 24 to 58 with a mean age of 32.53 (SD 8.931). Majority of the midwives (n=11) were in the age group of 21 to 30 and only one midwife was in the age group of 51 to 60. Thirteen were female midwives while four were male midwives. Majority of the midwives (n=12) were nurse midwife technicians (NMTs), 4 were registered nurse midwives (RNMs) and one was an enrolled nurse. The midwives had various professional qualifications including Certificate in Nursing and Midwifery for the enrolled nurse, Diploma in Nursing and Midwifery for the twelve nurse midwife technicians and two of the registered nurse midwives (n=14), and University Degree in Nursing and Midwifery for the other registered nurse midwives (n=2). Majority of the midwives (n=8) had worked in the labour ward for 1 to 5 years, the most experienced midwife (n=1) had worked for 11 to 15 years and the least experienced midwives (n=4) had worked for less than a year. Table 2 summarises the demographic characteristics of the midwives.

Table 2

Demographic Characteristics of the Midwives (n=17)

Demographic Variable	Frequency
Age Category	
21 to 30	11
31 to 40	4
41 to 50	1
51 to 60	1
Gender	
Male	4
Female	13
Qualification	
Registered Nurse Midwife	4
Nurse Midwife Technician	12
Enrolled midwife	1
Years worked in Labour Ward	
Less than 1 year	4
1 to 5 years	8
6 to 10 years	4
11 to 15 years	1

Women's Knowledge of Birthing Positions

General Knowledge of Birthing Positions

The study revealed that majority of the women knew more than one position. The **dorsal** position was known by majority of the women (97.8%; n=261) followed by side lying (50.6%; n=135), then sitting (21%; n=56) and semi-recumbent (17.2%; n=46) positions. The results are shown in figure 1.

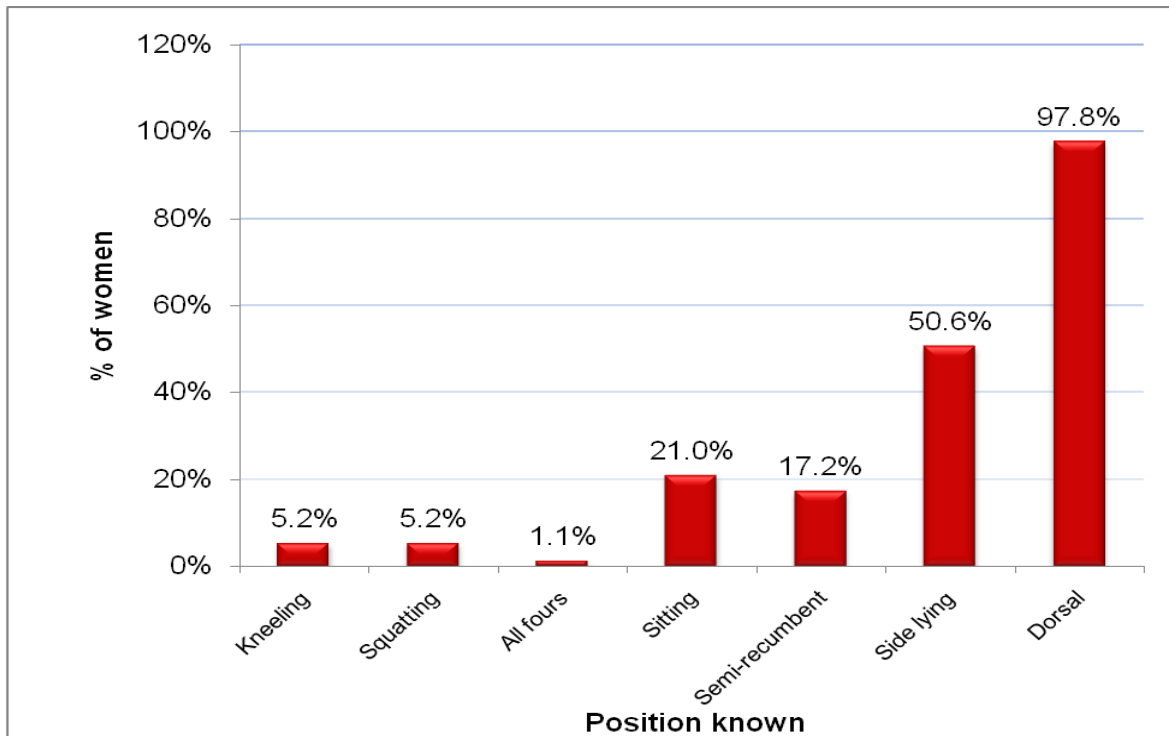


Figure 1: General Knowledge of Birthing Positions

Knowledge of Positions used in Health Facilities and Home Setting

When the respondents were asked to mention the birthing positions which are used in health facilities, majority (96.6%; n=258) of the women knew the positions while only 3.4% (n=9) of the women did not know. The most commonly used positions for health facilities were **dorsal** (61%; n=254), side lying (27%; n=114), and semi-recumbent positions (11%; n=44). As opposed to the large number of women who knew the positions used in health facilities, only 44.2% (n=118) of the women knew the positions that are used at home, whereas 55.8% (n=149) did not. In particular, the positions that were mostly used in home setting were sitting (38%; n=69), **dorsal** (33%; n=60), squatting (9%; n=16), side lying 7% (n=13) and kneeling 6% (n=11) (Figure 2).

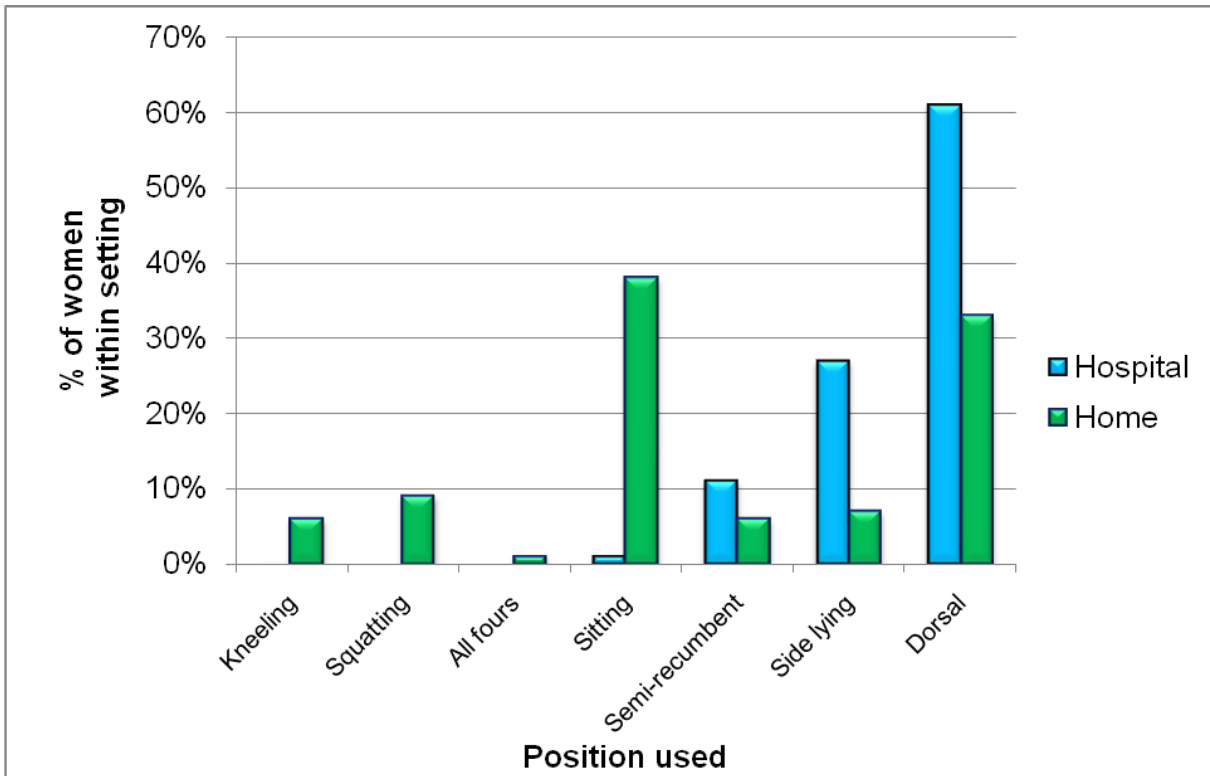


Figure 2: Percentage of Positions Used in Health facilities and Home Setting

Source of Knowledge for the Positions

In this study, majority of the women had heard about the positions from more than one source. As shown in Table 3, most of the women learnt about the positions from their midwives at the time of delivery (73%; n=195), their relatives (27.3%; n=73), midwives in antenatal clinic (14.2%; n=38), elderly women (12.7%; n=34), friends (10.1%; n=27) and traditional birth attendants (6.7%; n=18) (TBAs).

Table 3*Source of Knowledge for the Positions*

Source	Frequency	Percent
Midwives in labour ward	195	73.0
Relatives	73	27.3
Midwives in antenatal clinic	38	14.2
Elderly women	34	12.7
Friends	27	10.1
TBA	18	6.7
My intuition	4	1.5
Women from church	4	1.5
Movies	1	0.4
Total	394	147.4

Knowledge of Upright positions

The women were asked six questions to assess their knowledge of the benefits of upright birthing positions. The questions were on 5-point likert type of scale and they were asked to indicate their level of agreement with the statements that were presented. The options that were put across included; strongly agree, agree, somehow agree, disagree, and strongly disagree. The expected lowest and highest scores were 0 and 30 respectively. The scores for each respondent were computed and the total scores were categorised to indicate whether the women were knowledgeable or not knowledgeable. Those with scores from 1 to 15 were categorised as not knowledgeable while those with scores between 16 and 30 were categorised as knowledgeable. The results revealed a minimum score of 2 and a maximum score of 30 with an average score of 15.3 (SD 5.8) (Figure 3). Furthermore, it revealed that only 32.2% (n=86) of the women were knowledgeable of the benefits of upright positions whereas the majority (67.8%; n=181) were not knowledgeable.

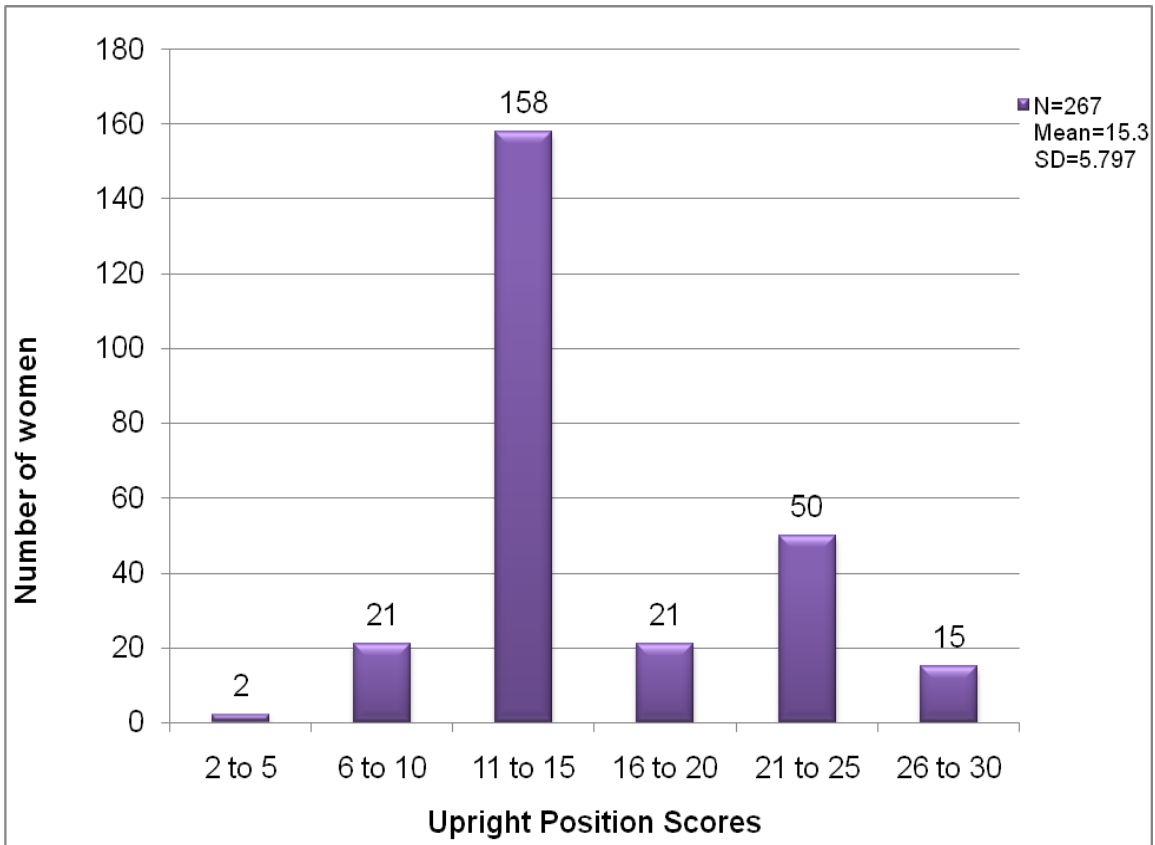


Figure 3: Scores for Knowledge of Upright Birthing Positions

Women's Experience of Birthing Positions

Percentage of Deliveries in Health Facility and Home Settings

The results revealed that majority of the women had all of their deliveries at a health facility, a bare majority had their deliveries both at a health facility and home and a few women had all deliveries at home (Figure 4). When hospital and home deliveries were compared, it was found that majority (79.81%; n=213) of the deliveries occurred at a health facility while 20.19% (n=54) occurred at home.

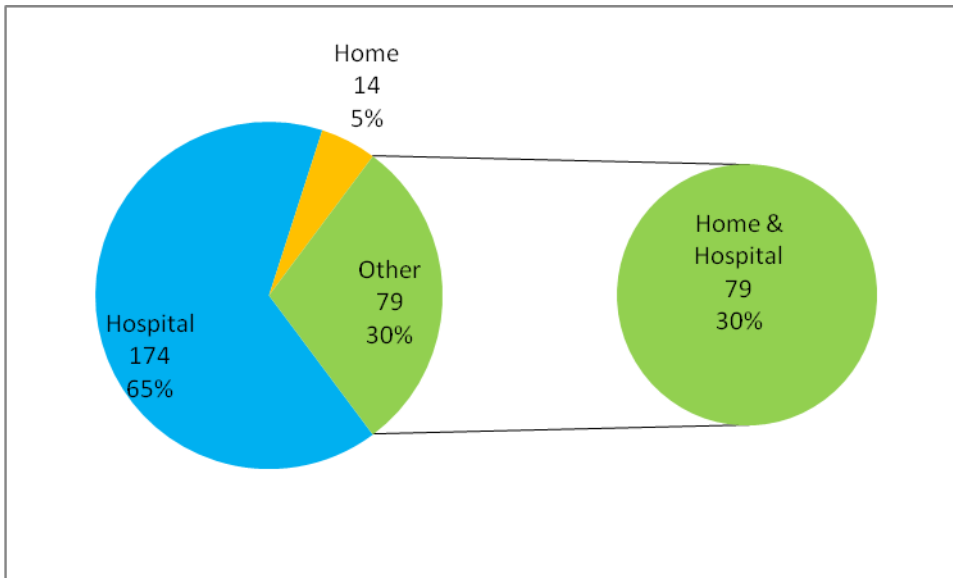


Figure 4: Deliveries at Hospital, Home & Hospital

Personnel Conducting Deliveries

The results of the study showed that the women had their deliveries conducted by different people depending on their place of delivery. Specifically, most of the women had their deliveries conducted by midwives (70%; n=241), traditional birth attendants (14.5%; n=50), and relatives (7%; n=24). In addition to this, a few women had their deliveries conducted by themselves (3.5%; n=12), elderly women (2.6%; n=9), medical assistants (1.5%; n=5), hospital attendants (0.9%; n=3).

Positions Assumed at Full Dilatation, during Pushing and during Delivery

The study revealed that the women had used more than one position during the second stage. In particular, the positions that were mostly assumed at full dilatation included **dorsal** (86.1%; n=230), 15.4% (n=42) sitting, semi-recumbent (15.4%; n=41) and side lying (13.1%; n=35). As opposed to the positions assumed at full dilatation, only three positions were mostly used for pushing including dorsal (94.4%; n=252), semi-recumbent (18.4%; n=49) and sitting

(14.6%; n=39). Likewise, dorsal (95.1%; n=254), semi-recumbent (16.9%; n=45) and sitting (12%; n=32) positions were mostly used during delivery (Figure 5).

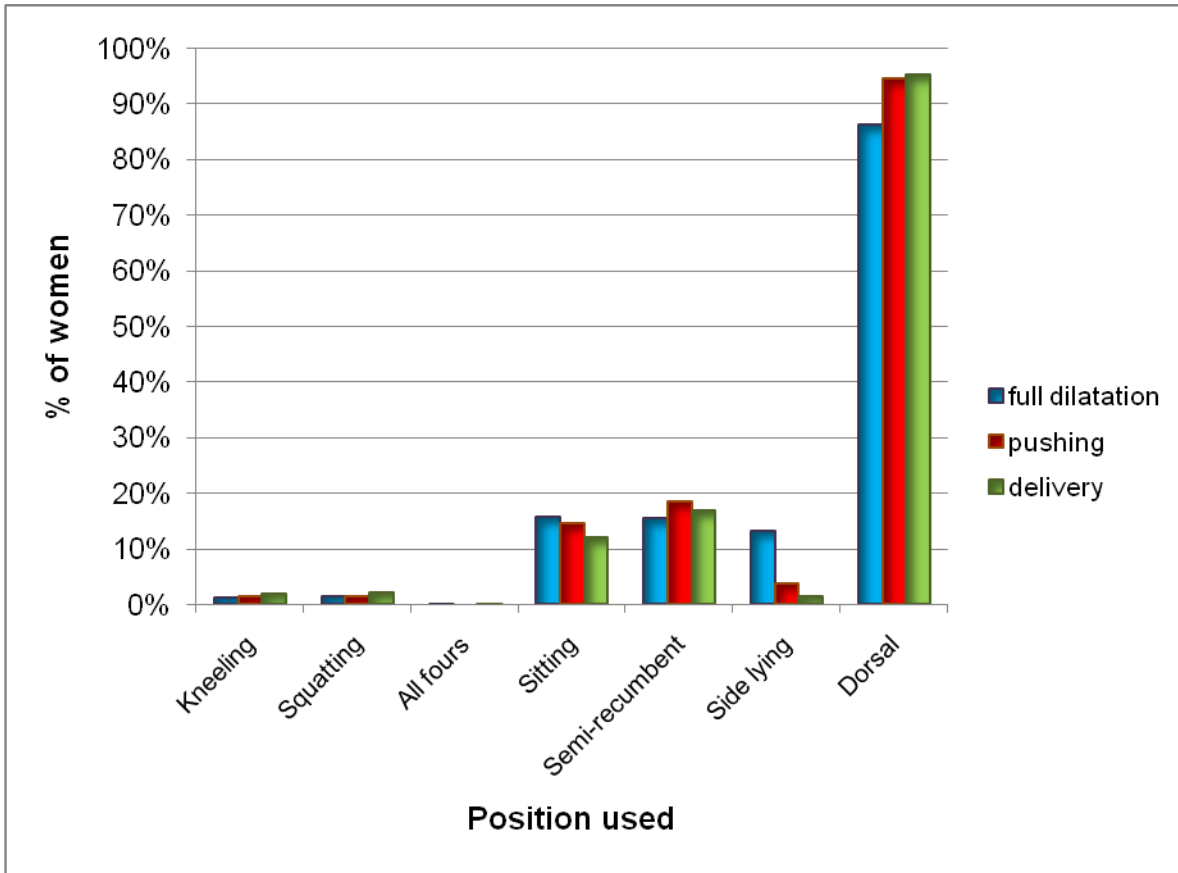


Figure 5: Positions assumed at full dilatation, during pushing and during delivery

Women’s Preferences for Birthing Positions

Preferred Positions for Second Stage

When the women were asked to mention the positions which they wanted to use during their next delivery, majority indicated that they preferred to use **dorsal** position (76.8%; n=205), a bare majority preferred to use sitting (8.2%; n=22), semi-recumbent (7.5%; n=20) and side lying (3.7%; n=10) positions. The results are shown in Figure 6. When compared for

upright and non-upright positions, it was found that majority (88%; n=235) of the women preferred to use non-upright positions and only 12% (n=31) preferred to use upright positions.

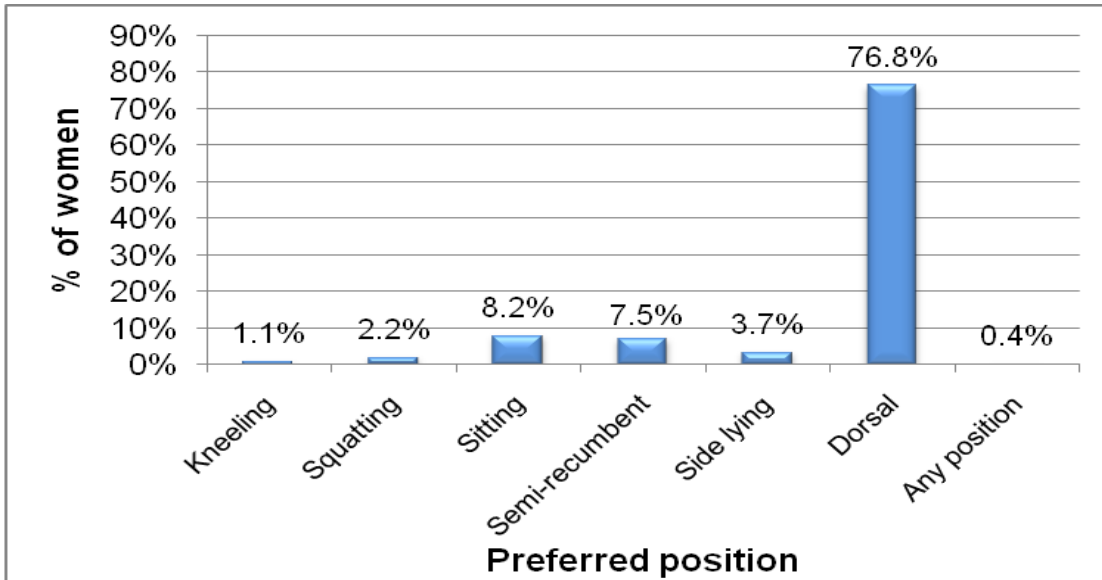


Figure 6: Preferred Positions for Second Stage

Change in Health Facilities

The women were asked to give some advice for the change they would like to have in terms of birthing positions in the health facilities. Eighty percent (n=214) of the women gave some advice while 20% (n=53) of the women refused to give any advice. Amongst the women who gave some advice, majority (60.7%; n=130) said that they would advise the midwives to continue using dorsal position because they are used to it and also because midwives do their job well in that position. About twenty two percent (n=46) said that they can advise them to offer upright birthing positions and 8.4% (n=18) said they would advise the midwives to explain to them the advantages of the different positions (Table 4).

Table 4*Advice for the Hospital*

	Frequency	Percent
Hospital advice		
They should continue using dorsal position because we are used to it and the midwives do their job well in that position	130	60.7
I can advise them to offer upright positions	46	21.5
The midwives should ask us the position that we want to use when we come for delivery	18	8.4
The midwives should teach us about birthing positions during antenatal care	15	7.0
The midwives should explain to us about birthing positions when we come for delivery	14	6.5
The midwives should explain to us the advantages of the positions	5	2.3
They should add side lying position	3	1.4
Unrelated	3	1.4
Midwives should be taught the other birthing position	2	0.9
If they can have things to support the back, I can choose upright birthing positions	1	0.5
Total	237	110.7

Out of the women who refused to give any advice, most of them (67.9%; n=36) said so because the midwives know what is supposed to be done, 11.3% (n=6) said it is because they are supposed to follow what the midwives say, another 11.3% (n=6) gave no reason and 7.5% (n=4) said it is difficult to advise the midwives on their job. Table 5 illustrates the details for not giving the advice.

Table 5: *I can't advise*

Reason for not giving advice	Frequency	Percent
They know what is supposed to be done	36	67.9
I'm supposed to follow what they tell me to do	6	11.3
No reason	6	11.3
It is difficult to advise them because it's their job	4	7.5
I only know of the supine positions	2	3.8
Every woman has her own preference	1	1.9
Total	55	103.8

Midwives Practices

The study has revealed that there were no information, education and communication (IEC) materials for positioning during the second stage in all the three facilities in which the study was conducted. To be specific, there were no posters, leaflets or brochures for positioning during second stage. Further, the study showed that there were no job aids for second stage positions. Moreover, all the facilities under study did not have resources for positioning women in the upright positions.

Guidelines and protocols

Positions for Pushing and Delivery

The midwives were observed while assisting women in second stage of labour. The results of the study showed that all the midwives used non-upright positions when assisting the women during pushing as well as during delivery. Particularly, the positions that were used when assisting the women to push included **dorsal** (88.2%; n=15), semi-recumbent (11.8%;

n=2) and side lying (11.8%; n=2) whereas **dorsal** (94.1%; n=16) and semi-recumbent (5.9 %; n=1) positions were used during delivery.

Relationship/Correlation/Association of the Variables

Relationship between Location and Knowledge of Upright Positions

Fifty percent (n=18) of the women from TA Maseya, 46.9% (n=30) from TA Katunga, 37.5% (n=9) from TA Ngabu, 28.2% (n=11) from TA Kasisi, 26.1% (n=6) from TA Mlilima and 15.4% (n=12) from TA Lundu were knowledgeable of the upright birthing positions while none of the women from TA Makhwira was knowledgeable. Out of the 86 women who were knowledgeable of the upright positions, majority were from TA Katunga (34.9%; n=30), TA Maseya (20.9%; n=18), TA Lundu (14%; n=12), TA Ngabu 10.5% (n=9) and TA Kasisi 12.8% (n=11). Traditional Authority Mlilima had the least number of women (7%; n=6) who were knowledgeable. The results revealed a Chi-Square (χ^2) statistic of 24.05 and P-value of 0.001 indicating a significant relationship between the women's location and knowledge of upright positions.

Relationship between Location and Upright Positions Preference

Fifteen percent (n=6) of the women from TA Kasisi, 14.1% (n=11) from TA Lundu, 12.5% (n=3) from TA Ngabu, 10.9% (n=7) from TA Katunga, 8.7% (n=2) from TA Mlilima and 5.6% (n=2) from TA Maseya preferred to use the upright birthing positions during their next delivery while there was none from TA Makhwira. Out of the 31 women who preferred to use the upright positions during their next delivery, majority were from TA Lundu (35.5%; n=11), 22.6% (n=7) from TA Katunga, 19.4% (n=6) from TA Kasisi, 9.7% (n=3) from TA Ngabu, 6.5% (n=2) from TA Maseya and another 6.5% (n=2) from TA Mlilima. The results

showed a χ^2 statistic of 8.89 and a P-value of 0.712 indicating a non significant relationship between the women's location and their preference for the upright positions.

Relationship between Age and Knowledge of Upright Positions

Forty six percent (n=6) of women in the age category of 18 to 20, 32.9% (n=50) of those in the age category of 21 to 30 and 30.3% (n=30) of those aged between 31 and 40 were knowledgeable of the upright positions. Out of the 86 women who were knowledgeable of the upright positions, majority were in the age categories of 21 to 30 (58.1%; n=50) and 31 to 40 (34.9%; n=30). The least knowledgeable were in the age category of 18 to 20 (7%; n=6). There was none who was knowledgeable among those who were in the age group of 41 to 50. The results indicated a χ^2 statistic of 2.78 and a P-value of 0.427 showing a non significant relationship between the women's age and their knowledge of the upright positions.

Relationship between Age and Upright Positions Preference

Thirty three percent (n=1) of women in the age category of 41 to 50, 11.8% (n=18) of those in the age category of 21 to 30, 11.1% (n=11) of those in the age category of 31 and 40 and 7.7% (n=1) of those aged between 18 and 20 preferred to use the upright positions. Out of the 31 women who preferred to use the upright positions, majority were in the age categories of 21 to 30 (58.1%; n=18) and 31 to 40 (35.5%; n=11) while there were only 3.2% (n=1) each for those in the age categories of 18 to 20 and 41 to 50. The results of the study revealed a χ^2 statistic of 21.14 and a p-value of 0.002 indicating that there was a significant relationship between the women's age and their preference for the upright positions.

Relationship between Educational Level and Knowledge Upright Positions

Forty percent (n=34) of the women with standard 1 to 5 education, 35.7% (n=15) of those with no education, 30.8% (n=12) of those with secondary education, 25% (n=24) of those with standard 5 to 8 education and 20% (n=1) of those with tertiary education had knowledge of the upright positions. Among the 86 women who were knowledgeable of the upright positions, majority had primary school level of education 67.4% (n=58), no education (17.4%; n=15) and secondary education (14%; n=12). Those with tertiary education (1.2%; n=1) were the least knowledgeable. In this study, the results showed that the null hypothesis of no relationship between the women's educational level and their knowledge of the upright positions was accepted at a significant level of 0.261 with a χ^2 statistic of 5.26.

Relationship between Educational Level and Upright Positions Preference

Forty percent (n=2) of the women with tertiary education, 21.2% (n=10) of those with primary education, 15.4% (n=6) of those with secondary education and 9.5% (n=4) of those with no education preferred to use the upright positions. Among the 31 women who preferred to use the upright positions, majority had primary school level of education (61%; n=19), 19.4% (n=6) had secondary education, 12.9% (n=4) had no education and 6.5% (n=2) had tertiary education. The results showed a χ^2 statistic of 6.86 and a p-value of 0.552 signifying that there was no relationship between the women's educational level and their preference for the upright positions.

Relationship between Occupation and Knowledge of Upright Positions

Forty percent (n=4) of the employed women, 36.9% (n=52) of the farmers, 26.5% (n=22) of the house wives, 24.2% (n=8) of the self employed were knowledgeable of the

upright positions. Among the 86 women who were knowledgeable of the upright positions, majority were farmers (60.5%; n=52), house wives (25.6%; n=22) and self employed (9.3%; n=8). The least knowledgeable were the employed (4.7%; n=4). It was revealed that the null hypothesis of no relationship between the women's occupation and their knowledge of the upright positions was accepted at a significant level of 0.274 with a χ^2 statistic of 3.88.

Relationship between Occupation and Upright Positions Preference

Twenty four percent (n=8) of the self employed, 20% (n=2) of the employed, 9.6% (n=8) of the house wives and 9.2% (n=13) of the farmers preferred to use the upright positions. Among the 31 women who preferred to use the upright positions, majority were farmers (41.9%; n=13) while there were 25.8% (n=8) each for the house wives and the self employed and 6.5% (n=2) of the employed. The results showed a χ^2 statistic of 7.76 and a p-value of 0.256 indicating a non significant relationship between the women's occupation and their preference for the upright positions

Relationship between Parity and Knowledge of Upright Positions

Thirty five percent (n=18) of the women with four children, 34.4% (n=42) of the women with two children, 33.3% (n=9) of those with five or more children and 25.8% (n=17) of the women with three children were knowledgeable of the upright positions. Among the women who were knowledgeable of the upright positions (n=86), majority (48.8%; n=42) had two children, 20.9% (n=18) had four children, 19.8% (n=17) had three children. Those with five or more children (10.5%; n=9) were the least knowledgeable. The null hypothesis of no relationship between the women's parity and their knowledge of the upright positions was accepted at a significant level of 0.640 with a χ^2 statistic of 1.69.

Relationship between Parity and Upright Positions Preference

Thirteen percent (n=16) of the women with two children, 12.1% (n=8) of the women with three children, 11.5% (n=6) of those with four children and 3.7% (n=1) of the women with five or more children preferred to use the upright positions. Among the women who preferred to use the upright positions (n=31), majority (51.6%; n=16) had two children, 25.8% (n=8) had three children, 19.4% (n=6) had four children and 3.2% (n=1) had five or more children. The results revealed a χ^2 statistic of 3.16 and a p-value of 0.789 indicating a non significant relationship between the women's parity and their preference for the upright positions.

Relationship between Knowledge of Upright Positions and Upright Positions Preference

Out of the 86 women who were knowledgeable of the upright positions, only 8.1% (n=7) wanted to use the upright positions and 91.9% (n=65) did not want to use the upright positions. Out of the 181 women who were not knowledgeable of the upright positions, 13.3% (n=24) wanted to use the upright positions. Amongst the 31 women who wanted to use upright positions, only 22.6% (n=7) were knowledgeable of the upright positions while 77.4% (n=24) were not. The results showed a χ^2 statistic of 2.01 and a p-value of 0.367 signifying that there was no relationship between the women's knowledge of upright positions and their preference for upright positions.

Relationship between Midwives' Experience and use of Upright Positions

There was no significant relationship ($P>0.05$) between midwives work experience and use of upright position for assisting the women during pushing as well as during delivery

because all the midwives regardless of their work experience used non-upright positions as such non-upright remained as a constant in the 2 way cross tabulation table.

Summary of the Results

This chapter has highlighted the results of the study on women's knowledge and preferences for birthing positions. It has also highlighted on the practices of midwives, specifically on the use of birthing positions **which they offer to women**. The results have shown that there was knowledge gap of the upright positions among the women as only few women were knowledgeable of the upright position. In addition, it was noted that the upright positions were mostly used in home setting while the non-upright positions were mostly used in health facilities. The results have also indicated that all the midwives who were observed used non-upright positions when assisting the women during the second stage of labour. Additionally, there were no IEC materials as well as resources for positioning during the second stage. It was also found that most of the women knew about the birthing positions through midwives, relatives, friends and elderly women. Further, the location in which the women resided had a significant influence on their knowledge of the benefits of upright positions. In the same way, the women's age had a significant influence on their preference for the upright positions. Moreover, it was also noted that out of the women who knew the upright positions, majority opted to use non-upright positions during their next delivery. Overall, most of the women who were interviewed preferred the **dorsal** position for their next delivery. Another important finding, though not very significant to this study, was that a good number of women had had a home delivery indicating that women are still delivering at home. The next and final chapter will discuss the results of the study, conclusions drawn from the study,

the study limitations, recommendations and implications of the study in regards to midwifery practice, research, education and policy making.

CHAPTER FIVE

Discussion

Introduction

This chapter will discuss the results of the study on women's awareness and preferences for birthing positions in Chikhwawa District. The aim of the study was to determine women's awareness of birthing positions and their preferences for any particular birthing position. The previous chapter presented the results of the study. In this chapter, the results will be interpreted and compared with the available evidence to find out if they corroborate, extend, refine or contradict with results of previous studies. The discussion will dwell much on the results with reference to the five sections of the questionnaire. In this regard, the discussion will highlight the major results and compare them with the available literature relating to socio-demographic characteristics associated with birthing positions, women's knowledge of birthing positions, women's experience of birthing positions, women's preferences for birthing positions and midwives practices of birthing position.

Socio-demographic Characteristics Associated with Birthing Positions

This section looked at the demographic characteristics of the women as well as the midwives. This information was vital because it has been hypothesized that demographic characteristics of women influence their use of birthing positions (De Jonge, Van Diem, Scheepers, Van Der Pal-de Bruin, & Lagro-Janssen, 2007; De Jonge, Rijnders, van Diem, Scheepers, & Lagro-Janssen, 2009; Nieuwenhuijze, Low, Korstjens, & Lagro-Janssen, 2014). Specifically, the women's demographic characteristics that have been included in this chapter

include location from which the women came from, their age, education level, occupation and parity. On the part of the midwives, the demographics that have been included are age, gender, qualification and work experience. The study also looked at the relationship between the midwives demographic characteristics and their use of birthing positions.

Location of the women

This study has revealed that the location from which the women came from had a significant influence ($P=0.001$) on the women's knowledge of upright positions. It was noted from the results that women who came from traditional authorities (TAs) Katunga and Maseya were more knowledgeable of the benefits of upright birthing positions compared to their counterparts who came from the other TAs. Fifty percent of the women from TA Maseya and 46.9% ($n=30$) from TA Katunga were knowledgeable of the benefits of upright positions while there were only 37.5% ($n=9$), 28.2% ($n=11$), 26.1% ($n=6$) and 15.4% ($n=12$) within the other TAs namely Ngabu, Kasisi, Mlilima and Lundu in their respective order. In addition, the study revealed that among all the women who were knowledgeable ($n=86$) of the benefits of the upright positions, TAs Katunga and Maseya had the highest numbers representing 34.9% ($n=30$) and 20.9% ($n=18$) respectively. Further, it was found that the percentage of women who were knowledgeable of the benefits upright positions was lower in TA Lundu (14%; $n=12$), Ngabu (10.5%; $n=9$), Kasisi (12.8%; $n=11$) and Mlilima (7%; $n=6$). This association between the women's location and their knowledge of the upright positions could be an indication that some discrepancy exist in the practices of birthing positions among the women from the different TAs and these practices need to be explored further. Although there was an association between the women's location and their knowledge of the benefits of the upright positions, the results showed that the women's location did not have an influence ($p=0.712$)

on their preference for the upright positions. It was noted that even though TA Katunga and Maseya had higher percentages of women who were knowledgeable of the benefits of the upright positions, this did not correspond to their preferences as only 9.7% of the women from TA Katunga and 6.5% from TA Maseya preferred to use the upright positions. On the other hand, despite having less than 20% of women who were knowledgeable of the benefits of the upright positions, TA Lundu had the highest percentage (35.5%; 11) of women who preferred to use the upright positions. Some of the factors that might have influenced the women's preference for supine birth could be the women's beliefs about the normality of birth (De Jonge, Teunissen, Van Diem, Scheepers, & Lagro-Janssen, 2008) as well as inflexibility of care providers in the birth settings since it has been reported that women are forced to deliver in supine position in health facilities (El-Nemer et al., 2006; Hodin, 2013; Sychareun et al., 2012). This means that even if the women can have the knowledge as well as preference for the upright positions, their wish to use upright positions can come to fruition only if the midwives are receptive to the use of the positions. In addition, the midwives require the necessary knowledge and skills for them to be able to conduct deliveries in the upright positions.

Age of the Women

Literature suggest that some discrepancies exist in the knowledge and preference of birthing positions among women of different age groups with an assumptions that older women are more likely to use upright birthing positions than women in the younger age group (De Jonge, et al., 2009). In addition, studies have shown that the knowledge and preference of upright positions declines as the women get much older, that is from 36 years old and above (De Jonge, et al., 2007). On the contrary, some studies have reported that age does not have

any influence on women's preference for upright positions (Nieuwenhuijze, Jonge, Korstjens, & Lagro-Jansse, 2012).

The results of this study have shown that the age of the women did not influence ($P=0.427$) their knowledge of upright positions. Majority of the women who knew the benefits of the upright positions were aged 21 to 30 (58.1%; $n=50$) and 31 to 40 (34.9%; $n=30$) while there were only 7% ($n=6$) of the women aged between 18 and 20 and none among the women in the age group of 41 to 50. Although there was a non significant relationship between the women's age and their knowledge of the benefits of the upright positions, the study revealed that there was a significant relationship ($p=0.002$) between the women's age and their preference for upright positions. Women aged 21 to 30 (58.1%; $n=18$) and 31 to 40 (35.5%; $n=11$) had more preference for the upright positions compared to those aged less than 18 to 20 (3.2%; $n=1$) and more than 41 years and above (3.2%; $n=1$). This result indicates that women belonging to the very active child bearing age group of 21 to 40 had more preference for the upright positions than those in the less active child bearing age groups (those below 21 years and more than 40 years). On the one hand, this discrepancy could partly be explained by the fact that those in the active child bearing group could have been exploring the various ways of giving birth and hence they might have had the chance of discussing the positions with their peers. On the other hand, those in the younger and older age groups might have had different matters of concern altogether other than that of birthing positions.

This result is congruent with the results of a study by De Jonge et al. (2007) which found that there was a difference in the use of birthing positions by women of different age groups. In their study, majority (51.7%) of the women aged 31 to 35 used the sitting position compared to those aged 26 to 30 (22.9%), 36 years and above (21.2%) and 25 years and

below (4.2%). Correspondingly, the results of a Netherlands study by De Jonge et al. (2009) evaluated the factors associated with birthing positions throughout the second stage of labour and at the time of birth. The study indicated that there was a difference in the use of birthing positions among women of different age groups with older women aged 36 and above having very minimal chances of using the supine position for delivery than women in other age groups. The preference of the upright position by the older women could be explained by the experience they had had from their previous births. However, it was also noted from the current study and that by De Jonge et al. (2007) that the knowledge as well as the preference for the upright positions declined as the women grew older. This partly may be due to the fact that most women may stop giving birth by the age of 35 and above and hence they may have limited sources of knowledge for the upright positions since their peers may not discuss the positions as much as the women in the active child bearing age group.

By a way of contrast, a Netherlands study by Nieuwenhuijze et al. (2012) examined pregnant women's preferences of birthing positions and the factors related to the use of their preferred positions. Their study revealed that age of the women did not have an influence on their preference as well as use of non supine positions. With the evidence presented so far, it can still be suggested that age to some extent influences women's preference for non supine birthing position. However, more studies could be conducted to investigate this further.

Educational Level

Studies have postulated that educational level of women influences their knowledge as well as their preference for upright birthing positions. Additionally, it has been suggested that educated women are likely to prefer non supine birthing positions for second stage labour compared to the less educated (De Jonge et al., 2009; Nieuwenhuijze et al., 2012). The results

of this study have shown that the women's educational level did not have an influence ($P=0.261$) on their knowledge of the upright positions. The study results indicated that majority of the women with knowledge of the benefits of upright positions had primary school level of education (67.4%; $n=58$) while few women with no formal education (17.4%; $n=15$), secondary education (14%; $n=12$) and tertiary education (1.2%; $n=1$) had the knowledge of the benefits of upright positions. In terms of their preferences, the results of the study also revealed a non significant relationship ($p=0.552$) between the women's educational level and their preference for the upright positions. Majority of the women who preferred to use the upright positions had primary school level of education (61.3%; $n=19$) whereas few women had secondary education (19.4%; $n=6$), no formal education (12.9%; $n=4$) and tertiary education (6.5%; $n=1$).

This result contradicts the findings of a Netherlands study by Nieuwenhuijze et al. (2012) which showed that educational level influenced women's preferences for upright birthing positions. In their study, they found that women with intermediate to higher educational level were more likely to use upright positions particularly sitting, squatting, birthing shell, hands and knees, standing and birthing stool. In tandem with this, De Jonge et al. (2009) examined the factors associated with birthing positions throughout the second stage of labour and at the time of birth. They reported from their study that highly educated women were less likely to give birth in the supine position compared with women with a low or medium education.

The inconsistency noted in this study and those of other studies could partly be explained by the differences which might exist in the practices of the different countries. For instance, it has been by the National Statistical Office (NSO) and ICF Macro (2011) that

women with higher education are more likely to have skilled attendant at birth than those with intermediate or no formal education. Since supine birth was common in health facilities, the educated women might have lacked the exposure of the non supine positions and consequently this might have affected their knowledge and preference thereof. Additionally, Malawi has not fully adopted the use of the upright positions in the health system and the information on upright positions is not readily available in the health facilities, magazines and newspapers which could be the main source of information for birthing positions among the highly educated women. On the other hand, one would expect the uneducated women to have more knowledge and preference for the upright positions. However, only a few of the uneducated women preferred to use the upright positions. This could be attributed to the current safe motherhood recommendation to ensure that all deliveries occur in health facilities where supine birth is the norm.

Occupational Status

The results of this study have revealed that the women's occupational status did not have an influence ($P=0.274$) on their level of knowledge of the upright birthing positions. Majority of the women who were knowledgeable of the upright positions were farmers (60.5%) and house wives (25.6%). In addition, only 9.3% of the self employed and 4.7% of the employed were knowledgeable of the upright positions. Further, the study results have shown that women's occupation did not have any influence ($P=0.256$) on their preference for the upright birthing positions. Majority of the women who preferred to use the upright birthing positions during their next pregnancy were farmers (41.9%; $n=13$) followed by house wives and the self employed (25.8% [8] each) and finally 6.5% for the employed. Most of the smallholder farmers in Malawi are uneducated and this may influence them to have home

deliveries. At home, they may be exposed to various birthing positions including the upright positions. Consequently, their knowledge for the benefits of the upright positions may be higher and thus their preference thereof may also be higher.

Parity and Knowledge of Upright Birthing Positions

The results of this study have shown that the parity of the women did not have any influence on their knowledge of upright birthing positions. There was a non significant relationship ($P=0.640$) between the women's parity and their knowledge of the upright positions. It was observed that among the women who were knowledgeable of the benefits of the upright positions ($n=86$), majority (48.8%; $n=42$) had two children, 20.9% ($n=18$) had four children, 19.8% ($n=17$) had three children and those with five or more children (10.5%; $n=9$) were the least knowledgeable. Adding to this, the analysis of the statistics showed a non significant relationship ($P=0.640$) between the women's parity and their preference for the upright positions. Majority (51.6%; $n=16$) of the women who preferred to use upright positions in their next delivery had two children, 25.8% ($n=8$) had three children, 19.4% ($n=6$) had four children and 3.2% ($n=1$) had five or more children. This result indicates that the knowledge as well as the preference of the upright positions declined as the women had more children. This trend correlates with that of age since the more the children the women had, the higher the age group to which they belonged. Therefore, it may mean that the focus of older women might have shifted from that of child bearing to other issues of major concern for their age groups.

This result is consistent with the findings of the study by De Jonge et al. (2009) which explored the factors associated with birthing positions throughout the second stage of labour and at the time of birth. Their findings showed that the parity of the women was not

significantly associated with the positions which the women used at the time of birth. In addition, there was a slight difference on the preference of birthing positions among the primiparas and the multiparas since the non supine positions were used by 10% of the primiparas while they were used by 10.5% of the multiparas. With the evidence presented above, it could be concluded that parity of women does not have much influence on their knowledge or preference for the upright positions.

Women's Knowledge of Birthing Positions

It has been postulated that most women are not aware of the upright birthing positions (Okonta, 2012). The results of this study have shown that the women knew more than one position. Additionally, the **dorsal** position was the most known position as it was known by the majority (97.8%; n=261) followed by the side lying position (50.6%; n=135), then sitting (21%; n=56) and semi recumbent (17.2%; n=46). The least known positions were kneeling, squatting and all fours which were known by 5.2%, 5.2% and 1.1% in their respective order. On the whole, the sitting position was the most known upright position. This result reinforces the findings of the study by Okonta (2012) which investigated the awareness of pregnant women about various positions for birthing and their preference for any particular birthing position. The study showed that the most known position was the supine position as it was known by 99.2% of the women. The squatting position was known by 10.7%, sitting position was known by 7.1% and the least known position was the hands and knees position which was known by only 4.6% of the women. This lack of knowledge of the upright position could result from the midwives inability to give information to the women about the birthing positions. Therefore, midwives should ensure that they give women adequate information about the birthing position so that the women should make informed choices.

The study has also shown that majority (96.6%; n=258) of the women knew the positions that are used in health facilities whereas only 3.4% (n=9) of the women did not know. The women reported that the most commonly used positions for health facilities were **dorsal** (61%; n=254), side lying (27%; n=114) and semi-recumbent positions (11%; n=44). Conversely, only 44.2% (n=118) of the women participants knew the positions that are favoured at home whereas 55.8% (n=149) did not know. Further, it was found that the sitting position was the most preferred position for home deliveries representing 38% (n=39) followed by **dorsal** (33%; n=60), then squatting (9%; n=16), side lying positions (7%; n=13), kneeling (6%; n=11) and semi-recumbent position (6%; n=11). From these results, it has been observed that the women who delivered in home settings had a wide range of choice in terms of the positions compared to those who delivered in the health facilities. In addition, the upright positions were mostly favoured in home settings than in the health facilities.

In line with this result is a qualitative study by Hodin (2013) which examined women's birth experiences in Kenya and Uganda. The study revealed that at home women were given the chance to assume different positions according to their preference. In addition, they were allowed to use upright positions such as sitting, kneeling and squatting. Furthermore, the women reported that the freedom to change positions gave them a positive birth experience.

Correspondingly, an ethnographic study by El-Nemer et al. (2006) explored the experience of giving birth in the hospital from the birthing women's point of view. It was reported from the study that women were routinely placed in the lithotomy position for delivery. Adding to this, some women reported that they had an unfavourable experience with hospital births and one of the factors that contributed to this was the lack of freedom to change

positions. In tandem with this, Sychareun et al. (2012) conducted an ethnographic study in Lao People's Democratic Republic (PDR) which explored the reasons for the preference of home deliveries by women and their families. The results of the study showed that one of the factors that barred the women from giving birth in health facilities was their wish to follow traditional practices such as giving birth in squatting and sitting positions. This calls for the midwives to provide care which is culturally congruent whilst achieving evidence based practice in the long run.

It has been suggested that women get information about birthing positions from various sources (Mwanzia, 2014). This study has indicated that majority of the women learnt about the positions from midwives in labour the wards (73%; n=195), their relatives (27.3%; n=73), midwives in antenatal clinics (14.2%; n=38), elderly women (12.7%; n=34), friends (10.1%; n=27) and traditional birth attendants (6.7%; n=18). This corroborates with the results of the study by Mwanzia (2014) which examined midwives' practices and women's perceptions and preferences of birth positions and how these influenced the women's view of hospital birth experience or choice of birth place. The study showed that majority (42%) of the women knew about birthing positions through experience from their previous births while 37% got the information about the positions from midwives or nurses in labour wards and 20% of the women knew the positions through their friends, relatives, media and traditional birth attendants. This is an important finding for midwives as it has pointed the key personnel that can assist in conveying the knowledge of the birthing positions. Most importantly is the finding that the women's major source of information about the birthing positions was the midwife. This necessitates the need to equip the midwives with knowledge of the various birthing positions, including upright positions, so that they should be able to

teach the women about the positions in antenatal clinics as well as at community level. Consequently, the women will be able to make informed choices about the positions when they are faced with the prospect of a health facility delivery thereby attracting more women to deliver in health facilities.

Finally, an assessment of in-depth knowledge about the benefits of upright positions among the women was examined using Likert scale questions in which the responses ranged from strongly agree (5) to strongly disagree (1). The results revealed that only 32.2% (n=86) of the women demonstrated in depth knowledge of the benefits of upright positions whereas the majority (67.8%; n=181) demonstrated some knowledge deficit. Correspondingly, it was not surprising when an overwhelming majority of the women expressed that they would prefer to use the **dorsal** position during their next delivery. Women should therefore be taught the benefits of the upright positions if they are to appreciate the need to use the positions.

Women's Experience of Birthing Positions

It has been purported that some women still deliver at home (Malawi Demographic Health Survey [MDHS], 2010). The results of the current study revealed that majority (65%; n=174) of the women had all of their deliveries at a health facility, 30% (n=79) had their deliveries both at a health facility and home and a few women (5%; n=14) had all their deliveries at home. This result indicates that despite the government efforts to ban home deliveries, some women are still delivering at home. On the whole, the rate of hospital deliveries was found to be 79.81% (n=213) while the rate of home births was 20.19% (n=54). The rate of hospital delivery reported in this study is slightly higher than that reported by the MDHS (2010) which found the rate of hospital deliveries to be at 73%. In a like manner, a Kenyan study by Mwanzia (2014) examined midwives' practices and women's perceptions

and preferences of birth positions and how these influenced women's views of hospital birth experience or choice of birth place. The study revealed that home deliveries occurred at the rate of 26.73% among women who participated in the study indicating that the rate of facility deliveries was at 73%. Therefore, it can be concluded that the women used the birthing positions which were customary in the setting in which the deliveries occurred.

In this study, it was found that majority of the deliveries were conducted by skilled health personnel particularly by midwives (70%; n=241) and very few deliveries by medical assistants (1.5%; n=5). The analysis of the statistics further indicated that some of the deliveries were conducted by unskilled birth attendants including TBAs (14.5%; n=50), relatives (7%; n=24) and elderly women (2.6%; n=9) in the villages. Adding to that, the births by unskilled birth attendants did not occur in home settings only, but also they occurred in health facilities. This was evidenced by the results which showed that 3 women (0.9%) were delivered by hospital attendants. Furthermore, some women (3.5%; n=12) reported that they delivered on their own. This result corresponds to the results of the MDHS (2010) which found that 71% of the births were conducted by skilled birth attendants with 10.7% assisted by a doctor or clinical officer and 60.6% aided by a nurse or midwife. Further, the survey revealed that traditional birth attendants were the next most common person assisting at delivery (14%), followed by relatives, friends and others (9%), then 3% by no one and 2% by a patient attendant. In this regard, the positions which were used by the women might have also depended on the skill as well as the preference of the personnel who conducted the deliveries.

Studies have postulated that majority of women use the supine position for delivery (Higginbottom et al., 2013; Hodin, 2013; Iyengar et al., 2014; Lavender & Mlay, 2006). The

current study has shown that majority of the women used the non upright positions during the second stage of labour with 86.1% (n=230) assuming the **dorsal** position, 15.4% (n=41) semi-recumbent and 13.1% (n=35) side lying position at full dilatation. Only 15.4% (n=42) of the women assumed the sitting position at full dilatation. Similarly, majority of the women pushed in the non supine positions including **dorsal** (94.4%; n=252) and semi-recumbent positions 18.4% (n=49) whereas the sitting positions was used by only 14.6% (n=39) of the women. In the like manner, the non supine positions were mostly used during actual delivery with 95.1% (n=254) using **dorsal** and 16.9% (n=45) semi-recumbent position. The sitting position was only used by 12% (n=32) of the women during the actual delivery. This result reinforces the finding of the study by Mwanzia (2014) as it was reported from the study that majority (76%) of the women used the supine position for birth whereas the upright positions were used by 24% of the women with 12% for kneeling, 8% squatting and 3.7% for sitting position.

Women's Preferences for Birthing Positions

Although most women report that they use the supine positions throughout the second stage of labour, there are some women who prefer to use the upright positions (Mwanzia, 2014; Nieuwenhuijze et al., 2014; Okonta, 2012). In this study, it was noted that whilst the majority (88%; n=235) of the women preferred to use supine positions for birthing during their next pregnancy, 12% (n=31) of the women preferred to use upright positions. Particularly, the upright positions which they preferred included sitting (8.2%; n=22), squatting (2.2%; n=6) and kneeling positions (1.1%; n=3). This is consistent with results of a Netherlands study by Nieuwenhuijze et al. (2012) which explored women's preferences for birthing positions during the second stage of labour. The study showed that 19.6% of women

preferred to use non supine positions. In line with this, the Kenyan study by Mwanzia (2014) examined midwives' practices and women's perceptions and preferences of birth positions and how these influenced the women's views of hospital birth experience or choice of birth place. The study revealed that upright birthing positions were preferred by 11% of the women with 8.6% (n=9) preferring the kneeling position and 1.9% (n=2) preferring the squatting position. Correspondingly, a Nigerian study by Okonta (2012) investigated the awareness of pregnant women about various positions for birthing and their preference for any particular birthing position. The study revealed that 18.9% of the women would use other birthing positions other than the supine position if the positions were recommended by their caregivers. This indicates that up to 19% of women who give birth prefer to use non supine positions other than the supine position which is mostly offered in the health facilities. This underscores the role that midwives have in teaching the women about the upright positions. In addition, midwives should respect the right of women to choose birthing positions of their preference. By doing so, women will easily adapt to the use of the upright positions and will be able to make informed choices.

Although some women in this study were knowledgeable of the benefits of upright positions, this did not have an influence ($P=0.367$) on their preference for the upright positions. The study showed that only 8.1% (n=7) of the women who were knowledgeable (n=86) of the upright positions and 13.3% (n=24) of those who were not knowledgeable (n=181) of the upright positions wanted to use the upright positions during their next delivery. Additionally, amongst the 31 women who preferred to use the upright positions during their next delivery, only 22.6% (n=7) were knowledgeable of the upright positions while 77.4% (n=24) were not knowledgeable.

This lack of correspondence between the women's knowledge and their preference for the upright positions could in part be explained by the fact that the women already know that the **dorsal** position is preferred by the midwives in health facilities. Consequently, their wish to use non upright positions may not be granted. In tandem with this is a study by Hodin (2013) which examined women's birthing experiences in East Africa. The results of the study revealed that the midwives did not allow the women to deliver in any position other than the supine position. Likewise, Sychareun et al. (2012) in their study conducted in Asia explored the reasons which made women and their families to prefer home deliveries to deliveries at health facilities. The results showed that despite the women's preference for squatting position, health facilities demanded that the women should lie on their backs for birth. Similarly, an ethnographic study conducted in Egypt by El-Nemer et al. (2006) revealed that women were routinely placed in the lithotomy position when giving birth in the health facilities. In the same vein, Anyait, Mukanga, Oundo, and Nuwaha (2012) evaluated the predictors of health facility delivery in Busia a rural district in Uganda. They found that there was an association between place of delivery and health system factors in the sense that the women delivered in a health facility if their preferred position was the supine position.

Correspondingly, it was not surprising when 20% (n=53) of the women in this study refused to give advice for changes regarding birthing positions used in health facilities. One of the reasons for not giving advice was that the women felt that the midwives know what is supposed to be done (67.9%; n=36). Another reason was that they felt that they are supposed to follow what the midwives instructed them to do (11.3%; n=6). Besides that, some women felt that it would be difficult for them to advise the midwives on their job (7.5%; n=4). On the one hand, this could be an indication that the women trust that whatever the midwives do is

correct or right practice. On the other hand, it could be an indication that the women fear the midwives as a result they choose to be obedient and follow every suggestion that is made by the midwives. For the women who gave some advice, majority (60.7%; n=130) wanted the midwives to continue using the **dorsal** position because they are used to it and also because midwives perform their job well in that position. In tandem with this, De Jonge and Lagro-Janssen (2004) conducted a study which examined the influences on women's use of birthing positions and labor experiences of women in relation to the birthing positions they used. The women in the study reported that the supine position enabled the midwives to do examinations properly. In addition the advice given by their midwives was the most important factor that influenced the choice of birthing positions which they used. Further, some women reported that the supine position was the most commonly used position and that they considered the use of supine position as a normal or traditional way of giving birth.

Midwives Practices

According to Thilagavathy (2012) simple resources such as backrests and pillows can be used to position women in upright positions. In addition to this, some furniture and equipment such as birth stools, birth balls, ropes and chairs can aid in positioning women in the non supine position. Furthermore, IEC materials such as posters, flip books and booklets have been found to be effective in improving clients' knowledge as well as uptake of health services (ORG Centre for Social Research, 2009). However, the current study has shown that information, education and communication (IEC) materials on birthing positions such as posters, leaflets and brochures were not available in all the three facilities. Additionally, the study showed that there were no job aids which could act as reference points for the midwives as well as assist them when teaching the women about birthing positions. Moreover, all the

facilities under study did not have resources which could assist in positioning the women in the upright positions. This calls for the need to put in place resources as well as equipment that can promote the use of upright positions.

World Health Organisation (WHO) recommends that supine birthing position should be avoided and advocates the use of upright birthing positions (World Health Organization, 1996). However, findings from other studies showed that women who delivered in hospitals were routinely delivered in the supine position (Declercq et al., 2013; Iyengar et al., 2014; Lugina et al., 2004; Shaban et al., 2011; Soong & Barnes, 2005). In this study it was observed that the midwives used one or two positions during the second stage. Although this was the case, majority of the deliveries were conducted in the supine positions. Eighty eight percent of the women (n=15) were assisted in **dorsal** position during the pushing period while 11.8% (n=2) were assisted in semi-recumbent and another 11.8% (n=2) in side lying positions. Similarly, the dorsal position was mostly used by the midwives when assisting the women during the actual delivery. Most of the midwives (94.1%; n=16) instructed the women to use dorsal position for delivery and only 1 (5.9 %) of the midwives used the semi-recumbent position. Additionally, the demographic characteristic of the midwives did not have an influence ($p > 0.05$) on their use of the birthing positions. It was also noted that all the midwives who were observed irrespective of their age, gender, cadre or qualification used dorsal positions when they assisted the women to push as well as at the time of delivery. Furthermore, the study revealed that the number of years the midwives had worked in the labour ward did not have an influence on their use of birthing positions. It was observed that even the midwives who had worked in the labour ward for more than 10 years used non upright positions when assisting the women during the second stage of labour. This result that

the midwives mostly used non upright positions for second stage corresponds with the positions which the women preferred to use during their next delivery suggesting that the women adhered to what their midwives instructed them to do when they delivered in the health facilities.

The finding that midwives mostly used supine positions for second stage is consistent with the findings of other studies. For instance, in United Kingdom (UK) it was found that 49% of births took place in semi-recumbent position (Royal College of Midwives, 2010). In the like manner, Iyengar et al. (2014) in their study examined the providers' adherence to evidence based care practices for childbirth before and after a quality improvement intervention in health facilities of Rajasthan, India. They reported from their study that the frequency of almost incorrect practices in facilities reduced except for dorsal delivery which still occurred at the rate of 93%. In tandem with this, Lugina et al. (2004) in their Tanzanian study explored women's experience during labour and delivery, their satisfaction with care and their preferred position during first stage of labour and providers' views about these practices. The study results showed that the supine position was used routinely at all the four study hospitals and it was used by 98% of the women.

Correspondingly, Shaban et al. (2011) examined maternity hospital practices in Jordan and assessed their consistency with evidence-based maternity care. The results of the study showed that childbirth practices were largely not in accordance with the World Health Organization evidence based practices for normal birth since all the 460 women who were observed during labour and birth gave birth in lithotomy position. Similarly, the listening to mothers III survey by Declercq et al. (2013) conducted in the United States (US) compared actual experiences of childbearing women and newborns with mothers' preferences, as well as

evidence-based care, optimal outcomes, and protections granted by law. In their study, majority (68%) of women who gave birth vaginally reported that they used supine position during the second stage, 23% gave birth in semi-sitting position and much smaller proportions gave birth either on their side (3%), squatting or sitting (4%), or in a hands and knees position (1%).

Furthermore, Soong & Barnes (2005) in their study examined the association between maternal position at birth and perineal outcome in women who had a midwife-attended, spontaneous vaginal birth and an uncomplicated pregnancy at term. The study revealed that most (65.9%) of the women gave birth in the semi-recumbent position, 14.6% in lateral position, 1.3% supine, 0.7% lithotomy, 1.4% kneeling, 9.9% all-fours, 1.3% squatting, 0.8% sitting, and 4.1% in standing position. Further, the semi recumbent position was associated with perineal sutures and the researchers concluded that women should not be restricted to use supine position, but rather they should be given a choice to give birth in the position which they find to be comfortable. Moreover, a study by Mwanzia (2014) investigated midwives' practices and women's perceptions and preferences of birth positions and how these influenced women's view of hospital birth experience or choice of birth place. The study revealed that 49% of the midwives preferred to use the lithotomy position while the upright positions including squatting (14.4%), sitting (2.7%) and kneeling (2.6%) positions were preferred by 19.6% of the midwives.

While there has been so much preference for the supine position by both the women and the midwives, current evidence suggests that the upright positions have many benefits compared to the supine position. For instance, the upright positions have been credited for their ability to increase the pelvic diameters (Reitter et al., 2014), uterine contractions and

improve the alignment of the uterus to the pelvic outlet (Gupta et al., 2012). Upright positions also reduce the duration of second stage of labour by up to 24 minutes (Roberts et al., 2005; Thies-Lagergren, Kvist, et al., 2013; Thilagavathy, 2012) and help to relieve the pain that women experience during the second stage (Berghella et al., 2008; Lawrence, Lewis, Hofmeyr, Dowswell, & Styles, 2009; Thilagavathy, 2012).

Although the demographic characteristics did not have an influence on the midwives' use of birthing positions, studies have reported some factors which influence midwives to continue using the supine birthing positions. Some midwives use the supine position because they are not conversant with the manoeuvres required to conduct deliveries in upright position (Bohren et al., 2014; De Jonge et al., 2008; Edqvist, Lindgren, & Lundgren, 2014; Lugina, Mlay, & Smith, 2004), some because it is convenient for them (Lugina et al., 2004b) or because it is a norm to deliver women in the supine position in the hospitals they work (De Jonge et al. 2008). Additionally, some midwives have reported that they shun from using the upright positions in fear of causing anal sphincter tears (Edqvist et al., 2014) and also because they feel the upright positions are not safe for women and their babies (Lugina et al., 2004b). These factors give a clear indication that the midwives have some knowledge gap in the use of the upright positions. Unless this gap is closed, the midwives will continue to use the supine positions when assisting women during the second stage of labour.

On the contrary, Albers, Sedler, Bedrick, Teaf and Peralta (2005) in their Mexican study examined the measures associated with lower levels of obstetric trauma. The results of the study showed that 83% of the women gave birth in upright positions (sitting position 80%, less than 1% each for squatting, hands and knees, or standing), 9.7% lied flat with stirrups and 7.4% used lateral recumbent position. Likewise, a study by Gottvall et al. (2007) reported

from their Swedish study that 58% of the women gave birth in upright position. Similarly, a Brazilian study by Silva et al. (2013) evaluated care in a freestanding birth centre in light of the practices recommended by the WHO. The study showed that majority (82.3%) of the women used semi-sitting position for delivery followed by side lying (16.0%) and other positions (1.7%). Some of the factors that have been found to promote the use of upright birthing positions include having resources and equipment for positioning (Jenkinson et al., 2014; Thilagavathy, 2012), involving women in decision making (Kenyon et al., 2007), educational activities aimed at promoting the use of various birthing positions (Miquelutti et al., 2013). Other factors that also promoted the use of the upright birthing positions were being responsive to women's requests about their chosen positions (Nieuwenhuijze et al., 2012), use of visual aids (Jenkinson et al., 2014), criterion based audits (Kongnyuy, Mlava, & Van den Broek, 2009) and use of initiatives such as the Approche PosturoRespiratoire de Bernadette de Gasquet (APOR) method which promotes change of position during the second stage of labour (Maheux-Lacroix et al., 2013).

Conclusion

The current study has shown that there was a relationship between the women's location and their knowledge of the benefits of upright position with women from traditional authorities (TAs) Katunga and Maseya being more knowledgeable. Additionally, there was an association between the women's age and their preference for the upright positions with those in the age groups of 21 to 30 (58.1%; n=18) and 31 to 40 (35.5%; n=11) having more preference than the other age groups. Furthermore, there was no association between the women's knowledge of the benefits of the upright positions and their preferences for the

upright position and this was related to the lack of use of the upright positions in health facilities.

Adding to that, there was some knowledge gap of the upright birthing positions by the women as the supine position was known by the majority (97.8; n=261) while the non supine positions were known by very few women with sitting position being the most known (21%; n=56) upright position. Further, most of the women did not know the benefits of the upright positions as only 32.2% (n=86) demonstrated some knowledge of the benefits of the upright positions. More so were the midwives who were observed as they all used the supine position when assisting the women during the second stage of labour. However, women who delivered in home settings had a wide range of choice in terms of the positions compared to those who delivered in the health facilities and the upright positions were the most commonly used positions for home settings.

Although the upright positions were were not used in the health facilities, 12% (n=31) of the women preferred to use the upright positions during their next delivery. These women may face some challenges with their birthing position option because midwives may not grant them their wishes since the midwives demonstrated that they preferred the non-upright positions. Some of the factors that contribute to the midwives preference for the non-upright positions are lack of knowledge and skills for the upright position as well as lack of resources and equipment for positioning women in the upright positions. Moreover, the women expressed some trust in what the midwives instructed them to do. This trust should not be undermined by the midwives, but rather, it should help them to offer the women the care that is in line with evidence based practices.

Study Limitations

Although the research was carefully planned, there were some unavoidable limitations. The limitations were related to time and financial constraints. To start with, there was specific period allocated for the study. This forced the researcher to initiate data collection during the rainy season in attempt to catch up with the study calendar. As such it was a difficult to reach Mfera Health Centre which was affected by floods. This increased the time for data collection.

Secondly, the funding that was allocated for the study by the sponsors was not enough in comparison with the nature of the study since the study was undertaken in three sites and it also used quantitative methods which required a lot of resources. However, the researcher managed to source other resources from Chikhwawa District Health Office as well as other well wishers in terms of stationary, printing and photocopying services and this made data collection successful.

Finally, the study is also limited due to its narrow range of representation of ethnicity. The study was only conducted in one district due to the limited time and finances. As such, there may be some bias if the results are applied to other populations which have totally different practices from those of the study district and more so the study sites. Conducting the study in several districts would have diversified the ethnicities and the study results would have been enriched.

Recommendations

The recommendations for the study relate to policy making, practice, education and research.

The recommendations include the following;

Policy making

There are a number of things that Policy makers can do to influence people in the service delivery to change their mind set on positions for second stage. As the study revealed, most women reported using the **dorsal** position for second stage. Similarly all the midwives who were observed used the **dorsal** position for assisting women during the second stage. In order to change this, there is need to review the midwifery policies as well as training or procedure manuals so that they should promote the use of upright birthing positions. In addition, standards should be put in place to stipulate the minimum resources required for the labour wards to allow for positioning of women in positions of their preference, including the upright positions. Furthermore, policy makers should lobby for the development of posters and job aids for upright positioning which should be distributed in health facilities as well as educational institutions so that providers and lectures/tutors should use them during service delivery.

Midwifery Practice

Since none of the midwives was observed using the upright positions, this could be an indication that the midwives do not have the necessary skills for positioning the women in the upright positions. There is need to train the midwives on positioning women in the upright positions. Not only will the training be enough for the midwives to be able to position the women in upright position for second stage, but also the labour wards should have some simple resources for positioning the women in the upright positions such as beds that can be adjusted to sitting or semi-sitting positions, birth stools or chairs to mention but a few. In addition, other resources already in the labour wards such stepping stools can be used for positioning women in the upright positions.

There is also need to improve the labour wards so that they provide privacy and allow for the involvement of men in the delivery room who can also assist in positioning of women in the upright positions. For instance, due to limited number of staff, the women can lean on their partners or where this may not be feasible, the women can as well lean on their guardian. In the same way, there is need to have some posters for birthing positions in the delivery rooms which can be pasted on the walls so that women should have an idea of the different positions for second stage. Furthermore, there should be some job aids in the labour wards to assist the midwives on the manoeuvres they can make when assisting women in the different positions. Finally, education activities for mothers in the antenatal clinics as well as maternity waiting homes should include information on the different birthing positions.

Education

The current midwifery curriculum as well as midwifery textbooks mostly emphasize about the supine position for birthing. There is need to include information on the upright birthing positions in the curriculum as well the textbooks so that the students should be taught information which is in line with evidence based practice. In additional, the skills laboratory for students should have some resources for upright positions so that when the students go to the clinical area they should be able to apply the skills. This will ensure that the midwives graduate with the necessary skills for upright positioning.

Research

The study revealed that knowledge level of the benefits of the upright position among women from traditional authorities (TAs) Maseya and Katunga were higher than those from other TAs. However, the specific factors that contributed to this are not known. Therefore, another study can be conducted in these areas to unveil the factors that contributed to these

higher levels of knowledge. Additionally, the current study only observed the midwives' practices. However, there is also a need to investigate about the perceptions and preferences for the birthing positions from the midwives point of view. Finally, the study can be replicated in several districts using other methods other than those which were used in this study so that the differences that may be noted should be used for informing policy as well as practice.

References

- Afsana, K., & Rashid, S. F. (2001). The challenges of meeting Rural Bangladeshi women's needs in delivery care. *Reproductive Health Matters*, 9(18), 79–89.
- Albers, L. L., Sedler, K. D., Bedrick, E. J., Teaf, D., & Peralta, P. (2005). Midwifery care measures in the second stage of labour and reduction of genital tract trauma at birth: a randomized trial. *Journal of Midwifery & Women's Health*, 50(5), 365–372.
Doi:10.1016/J.Jmwh.2005.05.012
- Anyait, A., Mukanga, D., Oundo, G. B., & Nuwaha, F. (2012). Predictors for health facility delivery in Busia District of Uganda: a cross sectional study. *BMC Pregnancy and Childbirth*, 12(1), 132. Doi:10.1186/1471-2393-12-132
- Balaskas, J. (1992). *Active birth-revised Edition: the new approach to giving birth naturally*. Boston, Mass: Harvard Common Place.
- Banks, A. C. (1999). *Birth chairs, midwives, and medicine*. Jackson: University of Press of Mississippi.
- Berghella, V., Baxter, J. K., & Chauhan, S. P. (2008). Evidence-based labour and delivery management. *American Journal of Obstetrics & Gynaecology*, 199(5), 445–454.
Doi:10.1016/J.Ajog.2008.06.093
- Bibeau, A. M. (2014). Interventions during labour and birth in the United States: a qualitative analysis of women's experiences. *Sexual & Reproductive Healthcare*, 5(4), 167–173.
Doi:10.1016/J.Srhc.2014.10.003
- Bohren, M. A., Hunter, E. C., Munthe-Kaas, H. M., Souza, J. P., Vogel, J. P., & Gülmezoglu, A. M. (2014). Facilitators and barriers to facility-based delivery in low- and middle-income

- countries: a qualitative evidence synthesis. *Reproductive Health*, 11. Doi:10.1186/1742-4755-11-71
- Bohren, M. A., Vogel, J. P., Hunter, E. C., Lutsiv, O., Makh, S. K., Souza, J. P., ... Gülmezoglu, A. M. (2015). The mistreatment of women during childbirth in health facilities globally: mixed-methods systematic review. *Plos Med*, 12(6), E1001847.
Doi:10.1371/Journal.Pmed.1001847
- Borders, N., Wendland, C., Haozous, E., Leeman, L., & Rogers, R. (2013). Midwives' verbal support of nulliparous women in second stage labour. *Journal of Obstetric, Gynaecologic, and Neonatal Nursing : JOGNN / NAACOG*, 42(3), 311–320.
Doi:10.1111/1552-6909.12028
- Coppen, R. (2005). *Birthing Positions: what do women want? Do midwives know best?* London,: Quay Books.
- De Jonge, A., Van Diem, Mt., Scheepers, P., Van Der Pal-De Bruin, K., & Lagro-Janssen, A. (2007). Increased blood loss in upright birthing positions originates from perineal damage. *BJOG: An International Journal of Obstetrics & Gynaecology*, 114(3), 349–355.
Doi:10.1111/J.1471-0528.2006.01210.X
- De Jonge, A., & Lagro-Janssen, A. L. M. (2004). Birthing positions. A qualitative study into the views of women about various birthing positions. *Journal of Psychosomatic Obstetrics & Gynaecology*, 25(1), 47–55.
- De Jonge, A., Van Diem, M. T., Scheepers, P. L. H., Buitendijk, S. E., & Lagro-Janssen, A. L. M. (2010). Risk of perineal damage is not a reason to discourage a sitting birthing position: a secondary analysis. *International Journal of Clinical Practice*, 64(5), 611–618.
Doi:10.1111/J.1742-1241.2009.02316.X

- De Jonge, A., Rijnders, M. E. B., Van Diem, M. T., Scheepers, P. L. H., & Lagro-Janssen, A. L. M. (2009). Are there inequalities in choice of birthing position? *Midwifery*, 25(4), 439–448. Doi:10.1016/J.Midw.2007.07.013
- De Jonge, A., Teunissen, D. A. M., Van Diem, M. T., Scheepers, P. L. H., & Lagro-Janssen, A. L. M. (2008). Women's positions during the second stage of labour: views of primary care midwives. *Journal of Advanced Nursing*, 63(4), 347–356. Doi:10.1111/J.1365-2648.2008.04703.X
- Declercq, E. R., Sakala, C., Corry, M. P., Applebaum, S., & Herrlich, A. (2013). Listening to mothers III: pregnancy and birth: report of the third National US Survey of women's childbearing experiences. *New York, NY: Childbirth Connection*.
- Dundes, L. (1987). The evolution of maternal birthing position. *American Journal of Public Health*, 77(5), 636–641.
- Edqvist, M., Lindgren, H., & Lundgren, I. (2014). Midwives' lived experience of a birth where the woman suffers an obstetric anal sphincter injury: a phenomenological study. *BMC Pregnancy & Childbirth*, 14. Doi: 10.1186/1471-2393-14-258
- El-Nemer, A., Downe, S., & Small, N. (2006). "She would help me from the heart": an ethnography of Egyptian women in labour. *Social Science & Medicine*, 62(1), 81–92. Doi:10.1016/J.Socscimed.2005.05.016
- Gayeski, M. E., & Brüggemann, O. M. (2009). Puerperal women's perceptions on vertical and horizontal deliveries. *Revista Latino-Americana De Enfermagem*, 17(2), 153–159. Doi:10.1590/S0104-11692009000200003

- Gizzo, S., Di Gangi, S., Noventa, M., Bacile, V., Zambon, A., & Nardelli, G. B. (2014). Women's choice of positions during labour: return to the past or a modern way to give birth? A cohort study in Italy. *Biomed Research International*, 2014, 1–7.
Doi:10.1155/2014/638093
- Gottvall, K., Allebeck, P., & Ekeus, C. (2007). Risk factors for anal sphincter tears: the importance of maternal position at birth. *BJOG: An International Journal of Obstetrics & Gynaecology*, 114(10), 1266–1272.
- Graham, A. J., & Bond, C. (2008). *The role of clinical nurse specialist, lecturer, practitioner and practice educator of clinical staff*. In L.E. Callara (Ed) nursing education challenges in the 21st century (pp. 49-114). New York: Nova Publishers.
- Gupta, J. K., & Hofmeyr, G. J. (2004). *Position for women during second stage of labour (Cochrane Review)*. *The Cochrane Library, Issue 3, 2004*. Chichester, UK: John Wiley & Sons, Ltd.
- Gupta, Janesh K, Hofmeyr, G. J., & Shehmar, M. (2012). Position in the second stage of labour for women without epidural anaesthesia. In *Cochrane Database of Systematic Reviews*. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD002006.pub3/epdf>
- Gupta, Janesh K, & Nikodem, C. (2000). Maternal posture in labour. *European Journal of Obstetrics & Gynaecology and Reproductive Biology*, 92(2), 273–277. Doi: 10.1016/S0301-2115(99)00272-9
- Hardin, A. M., & Buckner, E. B. (2004). Characteristics of a positive experience for women who have unmedicated childbirth. *The Journal of Perinatal Education*, 13(4), 10–16.
Doi:10.1624/105812404X6180

- Higginbottom, G. M., Safipour, J., Mumtaz, Z., Chiu, Y., Paton, P., & Pillay, J. (2013). "I have to do what I believe": Sudanese women's beliefs and resistance to hegemonic practices at home and during experiences of maternity care in Canada. *BMC Pregnancy and Childbirth*, *13*, 51. Doi:10.1186/1471-2393-13-51
- Hodin, S. (2013). *Mothers know best: women's birthing experiences in East Africa and implications for maternal and child health* (Thesis). Retrieved from [Http://Deepblue.Lib.Umich.Edu/Handle/2027.42/98909](http://Deepblue.Lib.Umich.Edu/Handle/2027.42/98909)
- Hunt, L. M., Glantz, N. M., & Halperin, D. C. (2002). Childbirth care-seeking behavior in Chiapas. *Health Care for Women International*, *23*(1), 98–118.
Doi:10.1080/073993302753428465
- Iravani, M., Zarean, E., Janghorbani, M., & Bahrami, M. (2015). Women's needs and expectations during normal labour and delivery. *Journal of Education and Health Promotion*, *4*. Doi:10.4103/2277-9531.151885
- Iyengar, K., Jain, M., Thomas, S., Dashora, K., Liu, W., Saini, P. ... Iyengar, S. (2014). Adherence to evidence based care practices for childbirth before and after a quality improvement intervention in health facilities of Rajasthan, India. *BMC Pregnancy and Childbirth*, *14*(1), 270. Doi: 10.1186/1471-2393-14-270
- Jenkinson, B., Josey, N., & Kruske, S. (2014). Birth space: an evidence-based guide to birth environment design. Retrieved from <http://Espace.Library.Uq.Edu.Au/View/UQ:339451>
- Kenyon, S., Ullman, R., Mori, R., & Whittle, M. (2007). Care of healthy women and their babies during childbirth: summary Of NICE Guidance. *BMJ : British Medical Journal*, *335*(7621), 667–668. Doi:10.1136/Bmj.39322.703380.AD

- Khalil, K., Elnoury, A., Cherine, M., Sholkamy, H., Hassanein, N., Mohsen, L., Aziz Shoubary, A. (2005). Hospital practice versus evidence-based obstetrics: categorizing practices for normal birth in an Egyptian teaching hospital. *Birth*, 32(4), 283–290.
- Kongnyuy, E. J., Mlava, G., & Van Den Broek, N. (2009). Criteria-based audit to improve women-friendly care in maternity units in Malawi. *The Journal of Obstetrics and Gynaecology Research*, 35(3), 483–489. Doi:10.1111/J.1447-0756.2008.00990.X
- Kopas, M. L. (2014). A review of evidence-based practices for management of the second stage of labour. *Journal of Midwifery & Women's Health*, 59(3), 264–276.
Doi:10.1111/Jmwh.12199
- Lavender, T., & Mlay, R. (2006). *Position in the second stage of labour for women without epidural anaesthesia: RHL practical aspects*. Geneva. World Health Organization.
Retrieved May 21, 2015, From
[Http://Apps.Who.Int/Rhl/Pregnancy_Childbirth/Childbirth/2nd_Stage/Tlacom/En/](http://apps.who.int/rhl/pregnancy_childbirth/childbirth/2nd_stage/tlacom/en/)
- Lawrence, A., Lewis, L., Hofmeyr, G. J., Dowswell, T., & Styles, C. (2009). Maternal positions and mobility during first stage labour. *The Cochrane Database of Systematic Reviews*, (2), CD003934. Doi:10.1002/14651858.CD003934.Pub2
- Liu, Y. (1979). Position during labour and delivery: history and perspective. *Journal of Nurse-Midwifery*, 24(3), 23–26. Doi:10.1016/0091-2182(79)90077-6
- Lugina, H., Mlay, R., & Smith, H. (2004). Mobility and maternal position during childbirth in Tanzania: an exploratory study at four government hospitals. *BMC Pregnancy and Childbirth*, 4(1), 3. Doi:10.1186/1471-2393-4-3
- Maheux-Lacroix, S., Tremblay, M., Dubois, N., Turcotte, S., Girard, N., Houde, M., ... Dodin, S. (2013). A new method of positioning at delivery compared with the dorsal recumbent

- position: an exploratory retrospective study of obstetric outcomes. *Journal of Obstetrics and Gynaecology Canada*: 35(6), 523–530.
- Maltby, J., Williams, G. A., McGarry, J., & Day, L. (2014). *Research methods for nursing and healthcare*. Routledge.
- Miquelutti, M. A., Cecatti, J. G., & Makuch, M. Y. (2013). Antenatal education and the birthing experience of Brazilian women: a qualitative study. *BMC Pregnancy and Childbirth*, 13, 171. Doi:10.1186/1471-2393-13-171
- Mulhall, A. (2008). *Methods of data collection for quantitative research*. In B. Roe & C. Webb (Eds), *Research and development in clinical nursing practice*. (pp. 135-166). Hoboken: John Wiley & Sons.
- Mwanzia, L. (2014). An investigation into the perceptions and preferences of birth positions in a Kenyan Referral Hospital. *African Journal of Midwifery & Women's Health*, 8(2), 82–89. Doi:10.12968/Ajmw.2014.8.2.82
- Mwanzia, L. N. (2013). *Second stage birth positions: perceptions and preferences of midwives and childbearing women at Mol Teaching and Referral Hospital*. Retrieved from [Http://ir.mu.ac.ke:8080/Xmloi/Handle/123456789/815](http://ir.mu.ac.ke:8080/Xmloi/Handle/123456789/815)
- Ministry of Health (2009). *Participants' manual in integrated maternal and neonatal care*. Lilongwe. Author
- National Statistical Office (NSO) and ICF Macro. 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Macro.
- Nasir, A., Korejo, R., & Noorani, K. J. (2007). Child birth in squatting position. *Journal-Pakistan Medical Association*, 57(1), 19.

- Nieuwenhuijze, M. J., Low, L. K., Korstjens, I., & Lagro-Janssen, T. (2014). The role of maternity care providers in promoting shared decision making regarding birthing positions during the second stage of labour. *Journal of Midwifery & Women's Health*, 59(3), 277–285.
- Nieuwenhuijze, M., Jonge, A. De, Korstjens, I., & Lagro-Jansse, T. (2012). Factors influencing the fulfilment of women's preferences for birthing positions during second stage of labour. *Journal of Psychosomatic Obstetrics & Gynaecology*, 33(1), 25–31.
Doi:10.3109/0167482X.2011.642428
- Okonta, P. I. (2012). Birthing positions: awareness and preferences of pregnant women in a developing country. *The Internet Journal of Gynaecology and Obstetrics*, 16(1).
Retrieved From
<http://Nigerianjournalofmedicine.Com/Files/Journals/1/Articles/170/Submission/Original/170-298-1-SM.Docx>
- Polit, D. F., & Beck, C. T. (2010). *Essentials of nursing research: appraising evidence for nursing practice* (7th Revised Edition). Philadelphia: Lippincott Williams and Wilkins.
- Reitter, A., Daviss, B.-A., Bisits, A., Schollenberger, A., Vogl, T., Herrmann, E., Zangos, S. (2014). Does pregnancy and/or shifting positions create more room in a woman's pelvis? *American Journal of Obstetrics and Gynaecology*, 211(6), 662.E1–662.E9.
Doi:10.1016/J.Ajog.2014.06.029
- Roberts, C. L., Algert, C. S., Cameron, C. A., & Torvaldsen, S. (2005). A meta-analysis of upright positions in the second stage to reduce instrumental deliveries in women with epidural analgesia. *Acta Obstetrica Et Gynecologica Scandinavica*, 84(8), 794–798.
Doi:10.1111/J.0001-6349.2005.00786.X

- Saravanan, S., Turrell, G., Johnson, H., & Fraser, J. (2010). Birthing practices of traditional birth attendants in South Asia in the context of training programmes. *Journal of Health Management, 12*(2), 93–121. Doi:10.1177/097206341001200201
- Shaban, I. A., Hatamleh, R., Khresheh, R., & Homer, C. (2011). Childbirth practices in Jordanian public hospitals: consistency with evidence-based maternity care? *International Journal of Evidence-Based Healthcare, 9*(1), 25–31. Doi:10.1111/J.1744-1609.2010.00197.X
- Silva, F. M. B. Da, Paixao, T. C. R. Da, Oliveira, S. M. J. V. De, Leite, J. S., Riesco, M. L. G., Osava, R. H., ... Osava, R. H. (2013). Care in a birth centre according to the recommendations of the World Health Organization. *Revista Da Escola De Enfermagem Da USP, 47*(5), 1031–1038. Doi:10.1590/S0080-623420130000500004
- Simkin, P. (2003). Maternal positions and pelvis revisited. *Birth, 30*(2), 130–132.
- Soong, B., & Barnes, M. (2005). Maternal position at midwife-attended birth and perineal trauma: is there an association? *Birth, 32*(3), 164–169. Doi:10.1111/J.0730-7659.2005.00365.X
- Sychareun, V., Hansana, V., Somphet, V., Xayavong, S., Phengsavanh, A., & Popenoe, R. (2012). Reasons rural Laotians choose home deliveries over delivery at health facilities: a qualitative study. *BMC Pregnancy and Childbirth, 12*, 86. Doi:10.1186/1471-2393-12-86
- Terry, R. R., Westcott, J., O’Shea, L., & Kelly, F. (2006). Postpartum outcomes in supine delivery by physicians Vs nonsupine delivery by midwives. *Journal of the American Osteopathic Association, 106*(4), 199–202.
- The Royal College of Midwives (RCM) (2012) *Guidelines for Midwifery-led Care in labour: Positions for labour and birth*. London: Author
- The Royal College of Midwives (RCM) (2010) *The Royal College of Midwives’ audit of*

- midwifery practice*. London: Author
- Thies-Lagergren, L. (2013). *The Swedish birth seat trial*. Retrieved from <http://Publications.Ki.Se/Xmlui/Handle/10616/41433>
- Thies-Lagergren, L., Hildingsson, I., Christensson, K., & Kvist, L. J. (2013). Who decides the position for birth? a follow-up study of a randomised controlled trial. *Women and Birth*, 26(4), E99–E104.
- Thies-Lagergren, L., Kvist, L. J., Sandin-Bojö, A.-K., Christensson, K., & Hildingsson, I. (2013). Labour augmentation and fetal outcomes in relation to birth positions: a secondary analysis of an RCT evaluating birth seat births. *Midwifery*, 29(4), 344–350.
- Thilagavathy, G. (2012). Maternal birthing position and outcome of labour. *The Journal of Family Welfare*, 58(1), 68–73.
- Tracy, S. K., Dahlen, H., Caplice, S., Laws, P., Wang, Y. A., Tracy, M. B., & Sullivan, E. (2007). Birth centres in Australia: a national population-based study of perinatal mortality associated with giving birth in a birth centre. *Birth*, 34(3), 194–201.
- Weisberg, H. F. (2009). *The total survey error approach: a guide to the new science of survey research*. Chicago: University Of Chicago Press.
- Wong, C. A., Scavone, B. M., Dugan, S., Smith, J. C., Prather, H., Ganchiff, J. N., & McCarthy, R. J. (2003). Incidence of postpartum lumbosacral spine and lower extremity nerve injuries. *Obstetrics & Gynaecology*, 101(2), 279–288.
- World Health Organization. (1996). *Care in normal birth : a practical guide*. Retrieved from <http://Apps.Who.Int/Iris/Handle/10665/63167>

APPENDICES

Appendix 1: Information Sheet for Women

My name is Tiwonge Nyirongo, a student at University of Malawi, Kamuzu College of Nursing. I am pursuing a Master of Science Degree course in Midwifery. As part of my studies I am conducting a research project on '*Women's Awareness and Preferences for Birthing Positions: A Comparison with Midwifery Practices. A study Conducted in Chikhwawa District*'. The aim of the study is to determine women's awareness of birthing positions and their preferences for any particular birthing positions. The purpose of this letter is to invite you to participate in the study.

Participation in the study is entirely voluntary. You may choose to participate or withdraw from the study at any time and this will not have any effect on the services that you receive from the health care providers in this facility. Furthermore, participation in the study does not have any foreseeable physical harm (risks); however, in cases of any emotional or psychological harm you may forward your concerns and complaints to the researcher at Kamuzu College of Nursing. You should also be informed that there are no benefits for participating in the study. However, the results of the study may help to identify any existing gaps in terms of birthing positions that are used in the hospital. Furthermore, the study may help to determine women's preferences of the birthing positions so that the health facilities should make proper adjustments to meet those needs. No reports in this study will identify you in any way and results of the study will be given to you if need be.

Should you agree to participate in the study, I will ask you to sign a consent form or put a finger print on the space provided to indicate that you have accepted to be interviewed. It is anticipated that the interview will take 20-30 minutes of your time and the interview will be

conducted at a time that is most suitable and convenient to you in a quiet environment to avoid any disturbances. The study and its procedures have been approved by College of Medicine Research Ethics Committee (COMREC), the District Health Officer of Chikhwawa and Catholic Health Commission of Chikhwawa Diocese. If you require any further information regarding the study or your rights as study participant you are free to contact me on this address: Tiwonge Nyirongo, Kamuzu College of Nursing, Blantyre Campus, P.O Box 415, Blantyre. Cell phone 0888 586 678/0999 196 386. You may also contact; The Secretariat, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3, Telephone 01989766.

Appendix 2: Consent Form for Women

Please read and sign the form if you are taking part in this study

I have read or have had another person read to me and have understood the content of the information sheet about the study and its procedures. I have been given the opportunity to ask questions, where deemed necessary, and my questions have been answered to my satisfaction. I understand that the information I will give will be kept confidential and will only be accessed by the researcher and/or those people who are directly concerned with the study. I know that I do not have to suffer any injury or harm during the research process and the information that I will give to the researcher should not be used against me in future. I voluntarily agree to take part in the study.

.....
Participant's Signature	Date
.....
Name of person taking consent	Date
(If different from researcher)	
.....
Researcher's Signature	Date

Should you have further inquiries use the following contacts: Tiwonge Nyirongo, Kamuzu College of Nursing, P.O Box 415, Blantyre. Cell phone 0888 586 678/0999 196 386 OR The Secretariat, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3, Telephone 01989766.

Appendix 3: Information Sheet for Women, Chichewa Version

Dzina langa ndine Tiwonge Nyirongo, wophunzira kusukulu ya ukachenjede ya Kamuzu Koleji. Ndikuphunzira za uzamba ndipo ndikupanga kafukufuku wokhudzana ndi *‘Zimene amayi ansinkhu wobereka akudziwa za mmene angakhali pochira/pobereka komanso makonda awo pa njira zimenezi’*. Cholinga cha kalatiyi ndikufuna kukupemphani kuti mutengapo nawo mbali polowa mukafukufukuyu. Cholinga chenicheni cha kafukufukuyu ndikupeza njira zokhalira pochira/kubereka zomwe amayi ansinkhu wobereka akudziwa komanso kufufuza makonda awo pa njirazo.

Dziwani kuti simukukakamizidwa kutengapo mbali mu kafukufukuyu komanso muli ndi ufulu wosiya kutenga mbali mu kafukufukuyu nthawi ina iliyonse ndipo sipadzakhala vuto lina lililonse pa chithandizo chomwe mumalandira pa chipatalachi. Muli omasuka kufunsa mafunso ali onse okhudza kafukufukuyu. Dziwaninso kuti mayankho anu adzasungidwa mwachinsisi ndipo sizizadziwika kuti anayankha mafunsowa ndi ndani chifukwa dzina lanu sililembedwa papepala la mafunso mmalo mwake tigwiritsa ntchito manambala. Dziwaninso kuti palibe chiopsezo china chilichonse pakutengapo nawo mbali mukafukufukuyi. Ngati mwavomereza kutenga nawo mbali pakafukufukuyi muzapemphedwa kusayina kapena kutsindikiza chala chanu pa kalata ya chilolezo ndiponso kuyankha mafunso kwanthawi yosachepera mphindi makumi awiri (20) komanso yosapyolera mphindi makumi anayi ndi mphambu zisanu (45).

Ngati pangakhale nkhwana kapena chodandaula china chili chose chokhudzana ndi kafukufukuyu muli omasuka kubweretsa madandaulo anu ku ma adiresi awa; Tiwonge Nyirongo, Kamuzu College of Nursing, Blantyre Campus, P.O Box 415, Blantyre. Cell phone

0888 586 678/0999 196 386. Kapena; The Secretariat, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3. Telephone 01989766.

Appendix 4: Consent Form for Women, Chichewa Version

Sayinani dzina lanu kapena tsindikizani chala chanu pamalo omwe apelekedwawo ngati mwavomera kutengapo mbali pakafukufukuyu

Ndavomera kufunsiwa ndikuyankha mafunso mmene ndingadziwire nditatha kuwerenga/nditawerengeredwa ndikumvetsetsa zomwe zalembedwa mu kalata yolongosola zakafukufukuyu, cholinga chake ndi zovuta zake. Ndamvetsetsanso kuti ndili ndiufulu wosiya kutenga nawo mbali nthawi ina iliyonse popanda vuto lili lonse ndipo kuti izi sizizasokoneza chithandizo chomwe ndimalandira pa chipatala pano. Ndamvetsetsanso kuti zonse zomwe ndiyankhule kapena kupereka mukafukufukuyu zizasungidwa mwachinsinsi ndiponso kuti palibe phindu la mtundu uli wonse lomwe ndingapeze potenga nawo mbali mu kafukufukuyi koma kuti zotsatira za kafukufukuyi zingathe kuthandiza kupeza njira za ‘mmene mayi angakhalire pochira’ zomwe amayi angakhutitsidwe nazo pa nthawi yobereka.

Ine ndavomera ndikupeleka chilolezo mosaumilizidwa kutengapo mbali pakafukufukuyu,

.....

Dzina la otengambali	Tsiku
.....
Dzina la wotenga chilolezo	Tsiku
.....
Mwini kafukufuku	Tsiku

Ngati pangakhale nkhwawa kapena chodandaula china chili chose chokhudzana ndi kafukufukuyu muli omasuka kubweretsa madandaulo anu ku ma adiresi awa; Tiwonge Nyirongo, Kamuzu College of Nursing, Blantyre Campus, P.O Box 415, Blantyre. Cell phone 0888 586 678/0999 196 386. Kapena; The Secretariat, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3. Telephone 01989766.

Appendix 5: Information Sheet for Midwives

My name is Tiwonge Nyirongo, a student at University of Malawi, Kamuzu College of Nursing. I am pursuing a Master of Science Degree course in Midwifery. As part of my studies I am conducting a research project on *‘Women’s Awareness and Preferences for Birthing Positions: A Comparison with Midwifery Practices. A study Conducted in Chikhwawa District’*. The aim of the study is to determine women’s awareness of birthing positions and their preferences for any particular birthing positions. The purpose of this letter is to invite you to participate in the study.

Participation in the study is entirely voluntary. You may choose to participate or withdraw from the study at any time and this will not have any effect on the services that you receive from the health care providers in this facility. Furthermore, participation in the study does not have any foreseeable physical harm (risks); however, in cases of any emotional or psychological harm you may forward your concerns and complaints to the researcher at Kamuzu College of Nursing. You should also be informed that there are no benefits for participating in the study. However, the results of the study may help to identify any existing gaps in terms of birthing positions that are used in the hospital. Furthermore, the study may help to determine women’s preferences of the birthing positions so that the health facilities should make proper adjustments to meet those needs. No reports in this study will identify you in any way and results of the study will be given to you if need be.

Should you agree to participate in the study, I will ask you to sign a consent form on the space provided to indicate that you have accepted that I should observe your practice. The study and its procedures have been approved by College of Medicine Research Ethics Committee (COMREC), the District Health Officer of Chikhwawa and Catholic Health

Commission of Chikhwawa Diocese. If you require any further information regarding the study or your rights as study participant you are free to contact me on this address: Tiwonge Nyirongo, Kamuzu College of Nursing, Blantyre Campus, P.O Box 415, Blantyre. Cell phone 0888 586 678/0999 196 386. You may also contact; The Secretariat, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3, Telephone 01989766.

Appendix 6: Consent Form for Midwives

Please read and sign the form if you are taking part in this study

I have read and understood the content of the information sheet about the study and its procedures. I have been given the opportunity to ask questions, where necessary, and the questions deemed have been answered to my satisfaction. I, therefore, give permission for the researcher to observe my practice. I understand that the information that will be obtained will be kept confidential and will only be accessed by the researcher and/or those people who are directly concerned with the study. I know that I do not have to suffer any injury or harm during the research process and that the information that will be obtained will not be used against me in future. I voluntarily agree to take part in the study.

.....

Participant’s Signature Date

.....

Name of person taking consent Date
(If different from researcher)

.....

Researcher’s Signature Date

Should you have further inquiries use the following contacts: Tiwonge Nyirongo, Kamuzu College of Nursing, P.O Box 415, Blantyre. Cell phone 0888 586 678/0999 196 386 OR The Secretariat, College of Medicine, Research and Ethics Committee, P/Bag 360, Chichiri, Blantyre 3, Telephone 01989766.

Appendix 7: Observation Checklist for Midwives

SECTION A: BACKGROUND INFORMATION	
NAME OF FACILITY	
TYPE OF FACILITY	
PARTICIPANT NUMBER	
AGE	
GENDER	
QUALIFICATION	
YEARS WORKED IN LABOUR WARD	

NO	OBSERVATION	COMMENT
SECTION B: GUIDELINES AND PROTOCOLS		
01	Are there any IEC materials in the delivery room for teaching clients on positions for second stage of labour? 1. Yes 2. No	
02	If yes, give details about the IECs materials? 1. Posters 2. Leaflets 3. Brochures 4. Others.....	
03	Are the IECs materials displayed? Explain 1. Yes 2. No	
04	Are there any job aids for positioning during second stage? 1. Yes 2. No	
05	If yes, give details about them? 1. Flip charts 2. Drawings 3. Others specify.....	
06	Does the midwife use the job aids to teach the clients on birthing positions? If yes, describe the type of job aid used 1. Yes 2. No	
07	Can the delivery bed be adjusted to sitting or semi-recumbent position? 1. Yes 2. No	

08	Does the delivery room have a birthing stool? 1. Yes 2. No	
SECTION C: POSITIONING DURING DELIVERY		
09	Does the midwife ask the client to assume a position of her preference? 1. Yes 2. No	—————> Go to 11
010	If no, who makes a choice for the birthing positions? 1. A midwife 2. A doctor/clinical officer 3. Others specify.....	
011	Which position does the client assume for pushing? 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side-lying 7. Dorsal 8. Others specify.....	
012	Which position does the client assume for birthing? 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side-lying 7. Dorsal 8. Others specify.....	
013	If the position is chosen by the midwife or another person, how does the client react? 1. Follows the suggested position 2. Asks the reasons for the suggested position? 3. Denies the suggested position 4. Others specify.....	—————> Skip to 15 —————> Skip to 15
014	Is the client comfortable with the position? Explain 1. Yes 2. No	—————> Go to 15
015	What does the midwife do? 1. Offers the client other birthing position options 2. Explains the reason for the position and leaves the woman in the same position	

	3. Explains the reason for the position and allows the woman to choose another position 4. Others specify.....	
--	---	--

Appendix 8: Interview Schedule for Women

Participant number..... Name of Village.....

Date..... Traditional Authority.....

SECTION A: DEMOGRAPHIC CHARACTERISTICS		
No	Questions	Comment
01	How old are you? Indicate actual age.....	
02	What is your marital status? 1. Married 2. Single 3. Divorced 4. Widowed 5. Others specify.....	
03	What is your religion? 1. Christian 2. Muslim 3. Pagan 4. Others specify.....	
04	What is your educational level? 1. No education 2. Std 1-4 3. Std 5-8 4. Secondary 5. Tertiary	
05	What is your occupation? 1. House wife 2. Farmer	

	3. Self employed 4. Employed	
<i>Instruction 1: If not pregnant go to 07</i>		
06	What is your gravidity 1. Two 2. Three 3. Four 4. Five or more	
07	How many children do you have? 1. Two 2. Three 3. Four 4. Five or more	
KNOWLEDGE OF BIRTHING POSITIONS		
08	Mention the birthing positions that you know. Circle all that have been mentioned 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side lying 7. Dorsal 8. Others specify.....	
09	How did you know about the birthing positions? Circle all that have been mentioned 1. I heard from friends 2. I was told by relatives 3. I learnt from midwives in antenatal clinic	

	<p>4. I heard from midwives in labour ward</p> <p>5. Others specify.....</p>	
01	<p>Which birthing positions are used at the hospital? Circle all that have been mentioned</p> <p>1. Kneeling</p> <p>2. Squatting</p> <p>3. All fours</p> <p>4. Sitting</p> <p>5. Semi-recumbent</p> <p>6. Side lying</p> <p>7. Dorsal</p> <p>8. Don't know</p> <p>9. Others specify</p>	
01	<p>Which birthing positions are used at home or TBA? Circle all that have been mentioned</p> <p>1. Kneeling</p> <p>2. Squatting</p> <p>3. All fours</p> <p>4. Sitting</p> <p>5. Semi-recumbent</p> <p>6. Side lying</p> <p>7. Supine</p> <p>8. Don't know</p> <p>9. Others specify.....</p>	
<p>KNOWLEDGE OF THE BENEFITS UPRIGHT BIRTHING POSITIONS</p> <p>We would like to know how much you agree with the following statements, please indicate whether you strongly agree, somehow agree, agree, disagree or strongly disagree with the statements</p>		
01	<p>Upright birthing positions prevent foetal heart rate abnormalities</p> <p>1. Strongly agree</p>	

	<ul style="list-style-type: none"> 2. Agree 3. Somehow Agree 4. Disagree 5. Strongly disagree 	
01	<p>Upright birthing positions reduce the intensity of pain</p> <ul style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Somehow Agree 4. Disagree 5. Strongly disagree 	
01	<p>Upright birthing positions promote descent of the foetus</p> <ul style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Somehow Agree 4. Disagree 5. Strongly disagree 	
01	<p>Upright birthing positions makes pushing of the baby easier during delivery</p> <ul style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Somehow Agree 4. Disagree 5. Strongly disagree 	
01	<p>Upright birthing positions facilitate the birthing process</p> <ul style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Somehow Agree 4. Disagree 5. Strongly disagree 	

01	Upright birthing positions reduce the chances of assisted births <ol style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Somehow Agree 4. Disagree 5. Strongly disagree 	
EXPERIENCE OF BIRTHING POSITIONS		
01	Of all your births, how many were delivered in hospital? <ol style="list-style-type: none"> 1. One 2. Two 3. Three 4. Four 5. Five or more 6. None 	
01	Of all your births, how many were delivered at a TBA? <ol style="list-style-type: none"> 1. One 2. Two 3. Three 4. Four 5. Five or more 6. None 	
02	Who conducted the delivery/ies? Circle all that have been mentioned <ol style="list-style-type: none"> 1. Midwife 2. Myself 3. TBA 4. Others specify..... 	
02	After the cervix was fully dilated and before you started pushing, which position did you assume? Circle all that have been mentioned and comment	

	<ol style="list-style-type: none"> 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side lying 7. Dorsal 8. Others specify..... 	
02	<p>Which position did you use for pushing? Circle all that have been mentioned and comment</p> <ol style="list-style-type: none"> 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side lying 7. Dorsal 8. Others specify..... 	
02	<p>In which position were you when your baby was born? Circle all that have been mentioned and comment</p> <ol style="list-style-type: none"> 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side lying 7. Dorsal 8. Others specify..... 	
02	<p>Were you involved in choosing the position/s? Explain</p> <ol style="list-style-type: none"> 1. Yes 	

	2. No	
02	Who chose or made the final decision for the position? 1. Myself 2. The midwife 3. Others specify.....	
02	What was the reason for choosing that particular position? Circle all that have been mentioned 1. It is the birthing position that I have known for years 2. The midwife instructed me to do so 3. The midwife said it reduces pain 4. The midwife said it enhances the delivery process 5. Don't know 6. Others specify.....	
02	How comfortable were you with the position? Comment 1. Very comfortable 2. Somehow comfortable 3. Uncomfortable	—————> Skip to 30
02	If you felt uncomfortable with the position, were you able to change to another position? Comment 1. Yes 2. No	—————> Go to 30
02	Since you were not comfortable with the birthing position that you used, does this affect your choice of delivery place during this or your subsequent pregnancy? Give reasons 1. Yes 2. No	
WOMEN'S PREFERENCES OF BIRTHING POSITIONS		
03	Which delivery position/s would you like to use during this or subsequent pregnancy/ies? Circle all that have been mentioned and give reasons	

	<ol style="list-style-type: none"> 1. Kneeling 2. Squatting 3. All fours 4. Sitting 5. Semi-recumbent 6. Side lying 7. Dorsal 8. Others specify..... 	
03	<p>In your opinion, who should choose delivery positions? Give reasons</p> <ol style="list-style-type: none"> 1. Client 2. Midwife 3. Others specify..... 	
03	<p>If a provider suggests a birthing position that you do not prefer, how possible is it that you would follow their suggestion? Explain</p> <ol style="list-style-type: none"> 1. Very possible 2. Somehow possible 3. Impossible 	
03	<p>In situations where your care provider suggests a birthing position, would you ask the provider about the reason for their suggestion and make a decision as a team? Explain</p> <ol style="list-style-type: none"> 1. Yes 2. No 	
03	<p>If the hospital was to make any changes in terms of birthing positions, what could be your recommendation/s?</p> <p>.....</p> <p>.....</p> <p>.....</p>	

Thank you for taking your time to answer the questions!

Appendix 9: Structured Questionnaire for Women, Chichewa Version

Nambala..... Dzina la mudzi.....

Date..... Mfumu Yayikulu.....

GAWO LOYAMBA: MBRI YANU		
No	Funso	Zofotokozer
01	Muli ndi zaka zingati?.....	
02	Kodi muli pa banja? 1. Ndili pabanja 2. Sindili pabanja 3. Banja linatha 4. Ndine wosiyidwa (mwamuna anamwalira) 5. Zina.....	
03	Ndinu a chipembedzo chanji? 1. Mkristu 2. Msilamu 3. Sindipemphera 4. Zina.....	
04	Sukulu manalekera kalasi lanji? 1. Sindidaphunzire 2. Sitandade 1-4 3. Sitandade 5-8 4. Sekondale 5. Koleji	
05	Mumagwira ntchito yanji? 1. Yapakhomo 2. Mlimi	

	3. Bizinesi 4. Ntchito yolembedwa	
<i>Chidziwitso 1: Ngati siyembezera pitani ku funso 7</i>		
06	Mimbayi ndi yachingati? 1. Yachiwiri 2. Yachitatu 3. Yachinayi 4. Yachisanu kapena kuposera	
07	Muli ndi ana angati? 1. Awiri 2. Atatu 3. Anayi 4. Asanu kapena kuposera	
GAWO LACHIWIRI: ZOMWE MUKUDZIWA ZA KAKHALIDWE KA MAYI POCHIRA		
08	Tchulani njira zosiyanasiyana za mmene mai angakhalire pochira. Zunguzani zonse zomwe zatchulidwa 1. Kugwada 2. Kunjuta 3. Kugona chopolama 4. Kuchira chokhala 5. Kugona monyamutsa mutu ndi nsana pang'ono 6. Kugona cha m'mbali 7. Kugona chagada 8. Zina.....	
09	Njira zimenezi munazidziwa bwanji? Zunguzani zonse zomwe zatchulidwa 1. Ndinamva kwa a nzanga 2. Ndinamva kwa achibale 3. Ndinamva kwa azamba ku sikelo ya mimba	

	<p>4. Ndinamva kwa azamba nditapita kokachira</p> <p>5. Zina.....</p>	
010	<p>Tchulani njira zokhalira pobereka zomwe zimagwiritsidwa ntchito kuchipatala? Zunguzani zonse zomwe zatchulidwa</p> <ol style="list-style-type: none"> 1. Kugwada 2. Kunjuta 3. Kugona chopolama 4. Kuchira chokhala 5. Kugona monyamutsa mutu ndi nsana pang'ono 6. Kugona cha m'mbali 7. Kugona chagada 8. Sindikudziwa 9. Zina..... 	
011	<p>Tchulani njira zokhalira pobereka zomwe zimagwiritsidwa ntchito kwa a zamba? Zunguzani zonse zomwe zatchulidwa</p> <ol style="list-style-type: none"> 1. Kugwada 2. Kunjuta 3. Kugona chopolama 4. Kuchira chokhala 5. Kugona monyamutsa mutu ndi nsana pang'ono 6. Kugona cha m'mbali 7. Kugona chagada 8. Sindikudziwa 9. Zina..... 	
<p>GAWO LACHITATU: NJIRA ZOKHALIRA POBEREKA ZOKHALA CHATSONGA</p> <p>Pa mafunso otsatirawa tikufuna kudziwa mmene mukugwirizanirana nazo mfundo zotsatirazi. Fotokozani ngati mukugwirizana nazo kwambiri, mukugwirizana nazo pang'ono, mukugwirizana nazo, simukugwirizana nazo kapena ngati simukugwirizana nazo mpang'onopomwe</p>		
012	<p>Njira zokhala chatsonga pobereka zimathandiza kuti mwana asabanike</p>	

	<ol style="list-style-type: none"> 1. Ndikugwirizana nazo kwambiri 2. Ndikugwirizana nazo 3. Ndikugwirizana nazo pang'ono 4. Sindikugwirizana nazo 5. Sindikugwirizana nazo mpang'ono pomwe 	
013	<p>Njira zokhala chatsonga pobereka zimathandiza kuchepetsa ululu</p> <ol style="list-style-type: none"> 1. Ndikugwirizana nazo kwambiri 2. Ndikugwirizana nazo 3. Ndikugwirizana nazo pang'ono 4. Sindikugwirizana nazo 5. Sindikugwirizana nazo mpang'ono pomwe 	
014	<p>Njira zokhala chatsonga pobereka zimathandiza kuti mwana atsike nsanga</p> <ol style="list-style-type: none"> 1. Ndikugwirizana nazo kwambiri 2. Ndikugwirizana nazo 3. Ndikugwirizana nazo pang'ono 4. Sindikugwirizana nazo 5. Sindikugwirizana nazo mpang'ono pomwe 	
015	<p>Njira zokhala chatsonga pobereka zimathandiza kuti mayi atchime mosavuta</p> <ol style="list-style-type: none"> 1. Ndikugwirizana nazo kwambiri 2. Ndikugwirizana nazo 3. Ndikugwirizana nazo pang'ono 4. Sindikugwirizana nazo 5. Sindikugwirizana nazo mpang'ono pomwe 	
016	<p>Njira zokhala chatsonga pobereka zimathandiza kuti mayi achire nsanga</p> <ol style="list-style-type: none"> 1. Ndikugwirizana nazo kwambiri 2. Ndikugwirizana nazo 3. Ndikugwirizana nazo pang'ono 	

	<ol style="list-style-type: none"> 4. Sindikugwirizana nazo 5. Sindikugwirizana nazo mpang'ono pomwe 	
017	<p>Njira zokhala chotsonga pobereka zimachepetza njira zina zothandizira pobereka (monga kukoka mwana ndi zitsulo, kuonjezera njira ndi zina)</p> <ol style="list-style-type: none"> 1. Ndikugwirizana nazo kwambiri 2. Ndikugwirizana nazo 3. Ndikugwirizana nazo pang'ono 4. Sindikugwirizana nazo 5. Sindikugwirizana nazo mpang'ono pomwe 	
NJIRA ZOKHALIRA POBEREKA ZOMWE MUNAGWIRITSAKO NTCHITO		
018	<p>Pa ana omwe mwaberekapo, ndi angati omwe munaberekera kuchipatala?</p> <ol style="list-style-type: none"> 1. M'modzi 2. Awiri 3. Atatu 4. Anayi 5. Asanu kapena kuposerapo 6. palibe 	
019	<p>Pa ana omwe mwaberekapo, ndi angati omwe munaberekera kwa azamba kapena kumudzi?</p> <ol style="list-style-type: none"> 1. M'modzi 2. Awiri 3. Atatu 4. Anayi 5. Asanu kapena kuposerapo 6. Palibe 	
020	<p>Anakuchiritsani ndi ndani? <i>Zunguzani zonse zomwe zatchulidwa</i></p> <ol style="list-style-type: none"> 1. Anamwino 2. Ndekha 	

	<p>3. Azamba</p> <p>4. Ena.....</p>	
021	<p>Njira itamalizika kutseguka koma musanayambe kutchima munagwiritsa ntchito njira iti/ziti yokhalira/zokhalira pobereka? Zunguzani zonse zomwe zatchulidwa ndipo fotokozani</p> <p>1. Mogwada</p> <p>2. Kunjuta</p> <p>3. Chopolama</p> <p>4. Chokhala</p> <p>5. Kugona monyamutsa mutu ndi nsana pang'ono</p> <p>6. Kugona cha m'mbali</p> <p>7. Chagada</p> <p>8. Zina.....</p>	
022	<p>Ndi njira ziti zokhalira pobereka zomwe munagwiritsako ntchito potchima? Zunguzani zonse zomwe zatchulidwa ndipo fotokozani</p> <p>1. Kugwada</p> <p>2. Kunjuta</p> <p>3. Chopolama</p> <p>4. Chokhala</p> <p>5. Kugona monyamutsa mutu ndi nsana pang'ono</p> <p>6. Kugona cha m'mbali</p> <p>7. Kugona chagada</p> <p>8. Zina.....</p>	
023	<p>Mmene mwana amabadwa munagwiritsa ntchito njira iti yokhalira pobereka? Zunguzani zonse zomwe zatchulidwa ndipo fotokozani</p> <p>1. Kugwada</p> <p>2. Kunjuta</p> <p>3. Kugona chopolama</p> <p>4. Chokhala</p>	

	<ol style="list-style-type: none"> 5. Kugona koma kunyamutsa mutu ndi nsana pang'ono 6. Kugona cha m'mbali 7. Kugona chagada 8. Zina..... 	
024	<p>Kodi munatenga nawo mbali posankha njira zokhalira poberekazo? Fotokozani</p> <ol style="list-style-type: none"> 1. Eya 2. Ayi 	
025	<p>Amene anapanga chiganizo chenicheni ndi ndani?</p> <ol style="list-style-type: none"> 1. Ineyo 2. Anamwino 3. Ena (tchulani)..... 	
026	<p>Njira zokhalira pobereka mwatchulazo zinasankhidwa chifukwa chiani? Zunguzani zonse zomwe zatchulidwa</p> <ol style="list-style-type: none"> 1. Ndi njira yomwe/zomwe ndimadziwa kuyambira kale 2. Anamwino ndi omwe anandilangiza kugwiritsa ntchito njirayo 3. Anamwino anati imathandiza kuchepetsa ululu 4. The anamwino anati imathandiza kuti munthu kuti achire nsanga 5. Zina..... 	
027	<p>Njira zokhalira pobereka zomwe zinasankhidwazo munakhutitsidwa nazo bwanji? Fotokozani</p> <ol style="list-style-type: none"> 1. Ndinakhutitsidwa nazo kwambiri 2. Ndinakhutitsidwa nazo png'ono 3. Sindinakhutitsidwe nazo 	<p>→ Pitani ku 30</p>
028	<p>Ngati simunakhutitsidwe nazo njira zokhalira pobereka zomwe zinasankhidwazo, kodi munali ndi mpata kusankha njira ina? Fotokozani</p> <ol style="list-style-type: none"> 1. Eya 2. Ayi 	<p>→ Pitani ku 30</p>

029	<p>Poti mwati simunakhutitsidwe ndi njira yokhalira pobereka yomwe munagwiritsa ntchito, zimenezi zikhudza mwa mtundu uli onse malo omwe mutakachirire mimba iyi kapena mimba za mtsogolo? Perekani zifukwa</p> <ol style="list-style-type: none"> 1. Eya 2. Ayi 	
MAKONDA A MAYI PA NJIRA ZOKHALIRA POBEREKA		
030	<p>Ndi njira ziti zokhalira pobereka zomwe mungakonde kugwiritsa ntchito mimba zanu za mtsogolo? Zunguzani zonse zomwe zatchulidwa ndipo perekani zifukwa</p> <ol style="list-style-type: none"> 1. Kugwada 2. Kunjuta 3. Kupolama 4. Kuchira chokhala 5. Kugona monyamutsa mutu ndi nsana pang'ono 6. Kugona cha m'mbali 7. Kugona chagada 8. Zina..... 	
031	<p>M'maganizo anu, amene ayenera kusankha njira zokhalira pobereka ndi ndani? Perekani zifukwa</p> <ol style="list-style-type: none"> 1. Mayi 2. Anamwino 3. Ena..... 	
032	<p>Ngati a namwino angakusankhireni njira zokhalira pobereka nkotheke bwanji kuti mukhoza kutsata njirazo? Fotokozani</p> <ol style="list-style-type: none"> 4. Nkotheke kwambiri 5. Nkotheke pang'ono 6. Nkosatheke 	
033	<p>Ngati anamwino angakusankhireni njira yokharira pobereka nkotheke kuwafunsa zifukwa zomwe asankhira njirazo komanso kukambirana nawo kuti mupange chiganizo limodzi? Fokozani</p> <ol style="list-style-type: none"> 1. Eya 	

	2. Ayi	
034	<p>Ngati achipatala angafune kusingha panjira zokhalira pobereka, mungawalangize chiani?</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	

Zikomo kwambiri chifukwa chopereka nthawi yanu kuyankha mafunsowa!