

**DETERMINANTS OF MODE OF DELIVERY AMONG POSTNATAL MOTHERS
ADMITTED IN WAJIR COUNTY REFERRAL HOSPITAL**

HABIBA ALI MAALIM

H56/81658/2015

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTERS OF SCIENCE IN NURSING
(OBSTETRIC NURSING/MIDWIFERY) AT THE UNIVERSITY OF NAIROBI.**

October, 2017

DECLARATION

I, Habiba Ali Maalim, hereby declare that this research thesis is my original work and has never been submitted for any academic award in any other institution of higher learning.

Signed:Date:.....

CERTIFICATE OF APPROVAL

This research has been submitted with our approval as university supervisors

1. Dr. Blasio Osogo Omuga, MMED (Obs/Gynae), M.B.C.h.B
Senior Lecturer, School of Nursing Sciences
University of Nairobi

Signature: Date:

2. Dr. Abednego Alibiri Ongeso, PhD CHD (Reproductive Health), MSc.N (Maternal Neonatal Health), BSc.N
Lecturer, School of Nursing Science
University of Nairobi

Signature..... Date.....

DEDICATION

This thesis is dedicated to my husband, Adan Ali, and children, Raliya, Abdihamid, Sumeya, Zulekha and Ahmed, for their perseverance and forbearing while I was working on this thesis.

ACKNOWLEDGMENT

The finalization of this study is a culmination of invaluable contributions by various persons. I wish to extend special thanks to my supervisors, Dr. Blasio Osogo Omuga and Mr. Abednego Ongeso, who gave me unlimited audience, guidance and support throughout this study.

I am thankful to Ms Hannah Inyama and Dr Oyieke for their mentorship and encouragement in conceiving this study. I am grateful for the input and cooperation of the senior management, post-natal ward staff and patients in Wajir referral hospital.

Sincere appreciation goes to the School of Nursing and the entire University of Nairobi for the opportunity and support offered to successfully undertake this course. Last but not least, I wish to express my gratitude to almighty God, members of my family and friends, for their invaluable material, moral and spiritual support without which this research thesis would not have been possible.

I am also thankful to all those who participated both directly and indirectly in the completion of this thesis.

God bless you all.

TABLE OF CONTENTS

DECLARATION.....	ii
CERTIFICATE OF APPROVAL.....	iii
DEDICATION.....	iv
ACKNOWLEDGMENT	v
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF FIGURES	xi
ABBREVIATIONS.....	xii
DEFINITION OF OPERATIONAL TERMS.....	xiv
ABSTRACT.....	xv
CHAPTER ONE: INTRODUCTION.....	1
1.1. Background information	1
1.2. Statement of the Problem.....	3
1.3. Justification of the Study.....	4
1.4. Hypothesis.....	4
1.5. Research question.....	4
1.5.1 Main research question.....	4
1.5.2 Specific research questions.....	5
1.6. Objectives of the Study	5
1.6.1 Broad Objective.....	5
1.6.2 Specific objectives	5

CHAPTER TWO: LITERATURE REVIEW.....	6
2.1 Introduction.....	6
2.2. Mode of delivery among mothers at time of birth.....	6
2.3. Determinants of mode of delivery.....	7
2.3.1 Socio-Demographic factors.....	7
2.3.2 Cultural Factors.....	11
2.3.3 Hospital related factors.....	13
2.3.4 Knowledge, Attitude and Practice Factors.....	16
2.4 Gaps in Literature Review.....	18
2.5 Theoretical Framework.....	19
2.5.1 Health Belief Model.....	19
2.6. Conceptual Framework.....	23
2.7 Operational Framework.....	24
CHAPTER THREE: METHODOLOGY.....	25
3.1 Study Design.....	25
3.2. Study Area.....	25
3.3. Study Population.....	25
3.4 Inclusion and Exclusion Criteria.....	25
3.4.1 Inclusion Criteria.....	25
3.4.2 Exclusion Criteria.....	26
3.5 Sample Size Determination.....	26
3.6. Sampling method and recruitment process.....	27
3.7 Data collection tools.....	28

3.8 Pretesting of the study Instrument.....	28
3.9 Training of Research Assistants.....	28
3.10 Data management.....	28
3.11 Data Analysis.....	29
3.12 Ethical Considerations.....	29
3.13 Dissemination plan.....	29
3.14 Limitation of the study.....	30
CHAPTER FOUR: RESULTS.....	31
4.1 THE SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS.....	31
4.2 INFLUENCE OF SOCIO-DEMOGRAPHIC FACTORS ON DELIVERY MODE.....	33
4.3: CULTURAL FACTORS AND THEIR INFLUENCE ON MODE OF DELIVERY.....	37
4.3.1 Ethnicity.....	37
4.3.2 Existence of prohibitive cultural values.....	37
4.3.3 Practice of FGM.....	38
4.3.4 Influence of cultural factors on mode of delivery.....	38
4.4. HOSPITAL RELATED FACTORS AND THEIR INFLUENCE ON MODE OF DELIVERY.....	40
4.4.1 Distance from Home to health Facility.....	40
4.4.2 Provider Friendliness.....	41
4.4.3 Perceived Service Quality.....	41
4.4.4 Influence of Hospital Related factors on mode of delivery.....	42
4.5 WOMEN KNOWLEDGE, ATTITUDE, PRACTICES ON MODE OF DELIVERY.....	43
4.5.1 Knowledge of Post-natal Mothers on Delivery Mode and Associated Risks.....	43

4.5.2 Attitude of Post-natal Mothers towards Delivery Mode options.....	45
4.5.3 Maternal practices and experiences related to delivery modes	46
CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS	49
5.1 Discussion	49
5.1.1 Socio-Demographic	49
5.1.2 Cultural Factors	51
5.1.3 Hospital-related Factors.....	52
5.1.4 Knowledge, Attitude and Practice Factors	54
5.2 Conclusions	55
5.3 Recommendations	56
REFERENCES.....	58
APPENDICES	65
Appendix I: Time Frame	65
Appendix II: Study Budget	66
Appendix III: Participant Information Sheet and Information Sheet Consent Form	67
Appendix IVa: Consent Form (English Version).....	69
Appendix IVb: Fomu ya Kutoa Idhini Kushiriki	70
Appendix V: Study Questionnaire	71
Appendix VI: Key Informant Interviews guide	76
Appendix VII: Focused Group Discussion Guide.....	77
Appendix VIII: Ethical Review Approval	78
Appendix IX: Letter of Authorization from Wajir Referral Hospital	79
Appendix X: Map showing location of Wajir County Referral Hospital	80

LIST OF TABLES

Table 4. 1: Socio-demographic characteristics of postnatal mothers	32
Table 4.2 Influence of socio-demographic characteristics on mode of delivery.....	36
Table 4.3 Influence of Cultural Factors on Mode of Delivery.....	40
Table 4.4 Influence of Hospital-related Factors on Mode of Delivery.....	43
Table 4.5 Knowledge of post-natal mothers on delivery mode issues	44
Table 4.6 Proportion of women with correct knowledge on delivery issues.....	45
Table 4.7 Attitude of post-natal mothers towards delivery mode options	46
Table 4.8 ANC Attendance and usefulness	47
Table 4.9 Delivery Modes, previous delivery place and satisfaction with delivery mode	48

LIST OF FIGURES

Figure 2.1 Conceptual framework of the study	23
Figure 2.2 operational Framework of the Study.....	24
Figure 4.1 Ethnicity of post-natal mothers	37
Figure 4.2 Cultural values which prohibits certain delivery modes	37
Figure 4.3 Practice of FGM	38
Figure 4.4 Distance from post-natal mother's home to the health facility	40
Figure 4.5 Friendliness of staff to post-natal mothers	41
Figure 4.6 Perceived service quality of delivery services by post-natal mothers	41

ABBREVIATIONS

ANC	Antenatal Care
CD	Caesarian Delivery
CS	Caesarian Section
CPD	Cephalo Pelvic Disproportion
FGM	Female Genital Mutilation
VVF	VesicoVaginal Fistulae
RVF	Recto Vaginal Fistulae
HIV	Human Immunodeficiency Virus
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
MMR	Maternal Mortality Ratio
PMR	Perinatal Mortality Rate
SPSS	Statistical Package for Social Sciences
USA	United States of America
WHO	World Health Organization
HBM	Health Belief Model
SSA	Sub-Saharan Africa
UON	University Of Nairobi
KNH	Kenya National Hospital
FGD	Focused Group Discussion
FGM	Female Genital Mutilation
KII	Key informant interview

SIS	Society for International Development
VD	Vaginal Delivery
CoK	Constitutional of Kenya
CDMR	Caesarean Section on Mothers Request
KNBS	Kenya National Bureau of Statistics

DEFINITION OF OPERATIONAL TERMS

Attitude	This refers to a mother's feelings and perceptions towards service delivery
Caesarean Delivery on maternal Request (CDMR)	This refers to mother's choice to deliver by caesarean section without any medical decision. It denotes ability to demand and willingness to deliver by CS
Determinants	These are variables that have the potential to affect a mother's decision on mode of delivery
Knowledge	This refers to the level of information or awareness harbored by a woman with respect to delivery services.
Mode of delivery	This relates to the method through which a woman delivers a baby. In this study, delivery mode comprises vaginal delivery and caesarian section
Mother	A woman in reproductive age group which is 15 to 49 years
Practices	This relates to the women behaviors and actions that indirectly or directly relate to delivery decisions

ABSTRACT

Background: Globally, vaginal delivery has been widely accepted as unquestioned mode of birth. However, advances in technology and its adoption in reproductive care delivery has resulted in an increase in the number of Caesarean delivery in the recent years including Caesarian sections on maternal requests. This has increased options for preferred mode of delivery for mothers and led to significant reduction in maternal and neonatal mortality and morbidity. However, most African countries, mainly in rural and marginalized areas, use of caesarian section remains low even during emergency obstetric care. Despite this, limited studies to establish determinants of delivery modes have been done especially in remote rural areas such as Wajir County.

Study objective: The main objective of this study was to establish determinants of mode of delivery among postnatal mothers admitted in Wajir County referral Hospital

Methodology: A hospital based descriptive cross-sectional study design was used. Mixed method of quantitative and qualitative data was employed among 178 postnatal mothers who were systematically sampled from Wajir county Referral hospital. Quantitative data was collected using pre-tested semi-structured questionnaire through interviews and qualitative data was collected using Focus group discussion from the postnatal mothers and Key informants from the staff of the hospital. Descriptive analysis using means, frequency and proportions was computed. Chi-square test ($p < 0.05$) with corresponding 95% confidence interval was used to determine the association between study variables. Qualitative data collected was analyzed thematically.

Findings: The most preferred mode of delivery among the respondents was vaginal delivery at 92.1%. Analyses with Chi-Square test of independence revealed that maternal age ($p = 0.001$), marital status ($p = 0.016$), level of education ($p = 0.007$), parity ($p=0.03$), FGM practice ($p=0.001$) and belonging to the social health groups ($p= 0.001$) were the variables significantly associated with mode of delivery. A substantial number of women did not have sufficient knowledge on delivery options, benefits and risks to inform their decisions on delivery modes. This has caused women to embrace negative attitudes towards CS which has led to poor delivery practices like home delivery and CS refusal.

Conclusion: Vaginal Delivery is the most preferred mode of delivery even where CS is medically indicated. Caesarian section acceptance remains low due to lack of correct knowledge, poor attitude towards CS and lack of proper women counseling during ANC visits. Therefore, there is need for educational and economic empowerment of women and girls complemented with effective community sensitization and awareness campaigns on delivery-related complications, risks and alternative delivery options for emergency cases.

CHAPTER ONE: INTRODUCTION

1.1. Background information

Maternal health is recognized as a fundamental right hence the goal to have a country where every pregnancy is wanted, every birth is safe, every newborn is healthy and no mother should die while giving life (CoK, 2010). However, each year, 358,000 women die worldwide from pregnancy-related causes, nearly all in sub-Saharan Africa and Asia, and many women die from obstetric complications (WHO, 2010). Similarly, the World Health Organization (WHO) has reported that the proportion of deliveries attended by skilled health providers rose from 58% in 1990 to 68% in 2008 worldwide, but remained at only about 50% in Africa (WHO, 2013).

In this regard, every woman has a human right to the best possible care during pregnancy, delivery and postpartum periods to ensure her survival and that of her newborn without the distinction of race, religion and political belief, economic or social condition (CoK, 2010). Despite this fact, approximately eight million women suffer pregnancy-related and delivery-related complications and over half a million die every year although these deaths can be prevented (WHO, 2013). Delivery complications on average are also higher in rural areas in most low-income countries (Ganchimeg et al., 2013). This variation impacts on the levels and quality of delivery outcomes. Each death or long-term complication represents an individual tragedy for the woman, her partner, her children, her family and society at large.

Globally, giving birth through the natural process, ‘Vaginal Birth’ has been widely accepted as unquestioned mode of birth. On the other hand, use of Caesarean Section (CS), which involves an operative medical incision, has also been utilized as a mode of delivery especially among women with medical indications. In this regard, use of CS is crucial in reducing maternal morbidity and mortality from direct causes such as hemorrhage, infection, hypertensive disorders of pregnancy and obstructed labor (WHO, 2010). The leading indications for the emergency caesarian section were cephalopelvic disproportion, eclampsia, and pre-eclampsia.

The World Health Organization (WHO) suggests the ideal CS rate for a country to be 5% - 15% (Wylie & Mirza, 2008; WHO, 2010). However, in the urban areas of China, caesarean section rate of 54.2% was observed in 2008 and 25% and above in many Asian, European and Latin American countries (WHO, 2013). Across Europe there are significantly

differences between countries: in Italy the CS rate is 40% while in United States, the rate was 34% (Menacker & Hamilton, 2010). In Africa, the average frequency of CS is 9% (Shah et al., 2009). A study done in Nigeria, CS accounted for 14% of all deliveries of which 90% were emergencies. About 22% of the CS were medically indicated while 4% were CS on maternal requests. In Kenya, the average CS rate is about 6%, ranging from 1.59% among the low income earners (poor) to 13.74% among the high income earners (rich), which is below the WHO recommended rate of 5-15% (WHO, 2010). Many mothers decline accepting CS associating it with painful experience and perineal tears among other things (WHO, 2010)

Barriers exist on choice of preferable mode of delivery. For instance, many women refuse CS in favour of vaginal delivery due to its associated adverse effects compared to vaginal delivery which include higher costs of surgery, slower recovery for the woman, increased risk of adverse events in subsequent pregnancies, and increased complication rates such as infections, injury to nearby organs, and death, especially given the high prevalence of HIV infections (Lumbiganon *et al.*, 2010). On the other hand, CS is preferred by women who fear the pain associated with vaginal delivery. Women preferences for mode of delivery are reported to be influenced by culture, knowledge of risk and benefits, and personal and social factors. Reasons for women's preferences range from perceived ease of recovery and need to return to family responsibilities to concerns about the safety of the baby (Lumbiganon *et al.*, 2010).

Acceptances of CS is expected to be a more challenging issue in Wajir County, in which many mothers, due to their religious and cultural believes, are reported to incline towards home delivery. In addition, the county faces more complex challenges such as resource, infrastructural, human resource, roads and facility access which may further affect choice of delivery methods.

Advancement in delivery care including use of caesarian section (CS) has greatly improved outcome of births globally resulting into significant reduction in maternal and neonatal mortality and morbidity (WHO, 2010). However, the evidence to support this belief is limited especially in Africa Countries like Kenya. Therefore, this study was aimed to investigate the determinants factors of mode of delivery among postnatal mothers at Wajir County referral hospital

1.2. Statement of the Problem

A problem exists in the outcome of delivery care in most of African countries where maternal and perinatal mortality and morbidity is high (WHO, 2013). According to Kenya Demographic Health Survey (KDHS, 2014), Wajir county ranked second in the country with maternal mortality rate of 1683 per 100,000 live births against national average of 362/100,000 live births. The county was also reported to have high perinatal mortality rate of 32/1000 live births. In Wajir County, the caesarian acceptance rate stands at 1%-2% (Wajir Hospital statistics, 2016). This is against the rate of 6% targeted in Kenya. Lack of necessary cesarean section results in complications associated with obstructed labor, higher Perinatal and obstetric complications, vesico-vaginal fistulae (VVF), Recto- vaginal fistulae (RVF), hemorrhage, sepsis, fetal distress, birth asphyxia, death of the mother and the baby, irreversible neonatal and maternal damage and many other undesired outcomes (WHO, 2010).

Most delivery related negative outcomes can be prevented if necessary actions are in place. During the last 10 months (January 2016 – October 2016), the Wajir hospital had 192 mothers scheduled for caesarian section (CS). Only 10% (20 mothers) gave immediate consent for CS while 83% (160 mothers) gave late consent hence delaying emergency intervention. A total of 6% (12 mothers) refused completely and absconded from the unit leading to bad outcomes including deaths. The hospital has also recorded high perinatal mortality of 132 since January this year (Wajir Hospital Statistics, 2016). Also in the year 2015, out of 243 mothers who are schedule for CS, 192 mothers gave late consent, 20 of them declined to give consent. This resulted to 115 fresh still births and five maternal deaths (Wajir hospital statistics, 2015)

Despite this, no study had been carried out to evaluate and establish the reasons for difficulties experienced in the choice of mode of delivery in Wajir County which would have prevented some of these undesired outcomes, hence the gap that the study has investigated.

1.3. Justification of the Study

Delays in taking appropriate and timely action in obstetric care have been associated with increase in maternal and perinatal deaths which are mainly clustered around labour, delivery and immediate post-delivery. Reviews indicated high cases of delays in giving consent for CS and low rate of CS acceptance among pregnant women which is attributed to increase in avoidable pregnancy related complications such as obstructed labour and high rate of perinatal and maternal mortality reported in Wajir County.

Despite this, relevant studies on determinants of delays and low rate of CS acceptance rates as a mode of delivery were scanty and unavailable in Kenya and specifically, Wajir County hence hampering policy and programmatic interventions. This poses high cost of burden on healthcare resources, individual households and families considering that a total of 84% people (including women) in Wajir County are below poverty line (SID, 2016). Wajir County being a County Referral Hospital serves county wide population. Conducting such a study among this population will expect to generate valuable information in identifying the gaps and drawing recommendations which will inform policy makers and programme initiatives, managers of maternal and perinatal care aimed at improving obstetric care in the County. Therefore, this study was aimed to investigate the contributing factors of mode of delivery among postnatal mothers at Wajir County.

1.4. Hypothesis

H₀: There is no relationship between socio-demographic, cultural, hospital related factors and mode of delivery

1.5. Research question

1.5.1 Main research question

What are the determinants of the mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital?

1.5.2 Specific research questions

1. What are the socio-demographic factors that determine mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital?
2. What are the cultural factors that influence mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital?
3. What are the hospital related factors influencing mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital?
4. What are the maternal knowledge, attitude and practices towards mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital?

1.6. Objectives of the Study

1.6.1 Broad Objective

To establish the determinants of the mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital

1.6.2 Specific objectives

1. To establish socio-demographic factors that determine mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital
2. To determine cultural factors that influence mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital
3. To establish hospital related factors influencing mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital
4. To understand maternal knowledge, attitude and practices towards mode of delivery among postnatal mothers admitted in Wajir County Referral Hospital

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents review of related and similar studies on mode of delivery and general delivery care for mothers. It articulates and synthesis findings of related studies and documentation which relates to study objectives and expected outcomes including identifiable research or knowledge gaps. This chapter is organized according to research questions and objectives. The following subject are reviewed and discussed; modes of delivery and determinants of mode of delivery which include demographic factors, socio-economic factors, cultural factors, hospital-related factors and KAP factors related to mode of delivery. The chapter ends with a summary of research gaps identified in the review.

2.2 Mode of delivery among mothers at time of birth

The main modes of delivery are vaginal and caesarean section. Spontaneous vaginal delivery is usually considered to be indicative of natural or normal birth for which many mothers feel they don't require medical assistance (Fatemeh, 2014). The relevance of this result was confirmed by a study done in South Korea which revealed that, despite the 40% caesarean section rate, most women showed more favorable attitude towards vaginal delivery than caesarian section. According to a study done in Ethiopia by Abebe *et al.* (2012), only 10.6% of the women who delivered by caesarian section stated that they had requested for caesarian section. Similarly, a study done in Turkey by Arikan *et al.* (2011) showed that 66% of the women regarded vaginal delivery as a natural and acceptable mode of delivery. They regarded caesarian delivery as a risky procedure. This in turn increases the rate of home deliveries.

According to Bryanton *et al* (2008) who conducted a study in India, mothers especially in the Muslim community, prefer delivering at home due to greater privacy not completely guaranteed in hospital deliveries. For instance, many Muslim mothers refuse to be assisted by male attendants citing cultural beliefs and practices which increase motivation for home delivery. Due to this desire for normal birth, perceived by them as achievable at home, many lose the benefits of hospital based deliveries such as treatment for any infection associated with the birth, provision of professional advice on care of a newborn and post-natal care support. This has been linked to increasing child mortality and morbidity associated with lack of early care interventions (WHO, 2013).

A key benefit derived from spontaneous vaginal delivery is the physical, mental, psychological and emotional experience which gives mothers strength to cope with childbirth with added confidence of the mode being an expected natural process.

Leap *et al.* (2010) in his study in South Africa showed that for some mothers, it is proof of feminine identity and strength. Resultantly, women associate pain as an intrinsic natural expectation of childbirth. It adds to their motherly attachment, strength and love. This experience is perceived as an affirmation of successful female role-play as expected of a mother. They at times even prefer dealing with the pain using non-pharmacological methods with minimum help. According to a study done in Iran by Maharlouei *et al.* (2013), need for medication to some of them is not necessary which further puts the life of the baby and mother at risk.

Another delivery used is caesarean section which is perceived by some women as a better form of childbirth due to its association with absence of labor pains (Lavender *et al.* 2012). It makes women have no fear for childbirth. They are also encouraged by the safety of the procedure in these modern times. The speed of the procedure and the possibility of having a tubal ligation at the same time is also of positive value associated with this mode of delivery. Many have ended up with very pleasant experiences and have enjoyed the safety of the process (Lavender *et al.* 2012). There are also many other modes of delivery mothers can choose from. Some of these include assisted breech deliveries, giving birth under water, assisted vacuum delivery and trial of scar that mothers can consider. All these choices have made the birth process to be more personal with much greater satisfaction and fulfillment.

2.3. Determinants of mode of delivery

Prior to this study, determinants in Wajir County had not been established to explain the very low caesarean section uptake rate.

2.3.1 Socio-Demographic factors

Socio-demographic factors of the mother play a significant role in influencing mode of delivery choices. Maternal age is one of the factors shown to determine choice of delivery mode in which older mothers prefer vaginal delivery. This was observed in an Indian study conducted by Dharmalingam *et al.* (2010) which showed mothers who have previous successful vaginal delivery and those with traditional birth experiences to prefer vaginal

delivery than caesarean delivery. This was also reported in a study done in Ethiopia by Regassa (2011) in which older women were reluctant to use caesarian section as a mode of delivery. They preferred normal vaginal delivery with the assistance of traditional birth attendants which was perceived as safer and a sign of femininity.

Studies done in Nigeria showed that young couples had higher risk of vaginal delivery and prefer caesarian section than their older counterparts (Envuladu *et al.*, 2013). This was attributed to greater delivery experiences among old mothers and limited number of pregnancies in young people.

Study findings in western Uganda found that young mothers' choice of delivery was a function of affordability rather than age although other studies found no significant differences between young and old mothers with regard to mode of delivery (Wanjira *et al* (2014). This could be due to differences in study location context and socio-economic difference among women across different countries. For instance, in some countries especially developed countries, reproductive health care and education is better and provided to women at younger age than in the low income countries. This can result into significant differences in study results

In China, educated women were reported to be more likely to use caesarian section with the help of trained service providers in medical institutions (Klemetti *et al.* 2012). Education has also been positively associated with other aspects of maternal care such as antenatal and postnatal care. For example, a study conducted in Nepal found women with more than primary level education to be more likely to use antenatal care than those with no education (Dairo&Owoyokun 2010). This was also observed in Turkey (Arthur 2012).

Provision of good antenatal care can provide reliable information and support which can influence better choices of delivery modes at the time of delivery including preparation of delivery plan (Arthur, 2012). This is partly due to the higher levels of knowledge and understanding in regards to modern delivery methods and their associated benefits. These women have positive attitudes towards new and innovative medical advances hence higher likelihood of accepting and using modern methods of delivery. This was validated by an Ethiopian Demographic Health Survey conducted in 2011 which indicated that 5 per cent of uneducated mothers prefer caesarean delivery in comparison to 30 per cent of mothers with

secondary education who preferred the same method (Central Statistical Agency and ICF Macro, 2011).

Preference for vaginal delivery was also observed among rural women in Ethiopia and Nigeria (Tsegay *et al.*, 2013). Because of relatively poor infrastructure, like roads and clinics, in rural areas in most African countries, it is expected that use of caesarian sections by expectant mothers will be lower compared to those living in urban areas (Hajian *et al.*, 2015). This is also expected in Wajir County which faces challenges of poor infrastructure, roads and distance health facilities. However, the influence of this factor on modes of delivery has not been studied in Wajir County. As a result, rural women have been shown to have a 69% less chances of delivering using caesarian section when compared to urban women (Dagne, 2010; Hajian *et al.*, 2015). Another study by Maharlouei *et al* (2013) showed that urban women were significantly more likely to prefer the use of caesarean section as a mode of delivery compared to vaginal delivery. Preference for delivery by caesarean sections among urban residents may be attributed to easy accessibility of health facilities and access to better information on obstetric care. In addition, there are more government, private and non-government medical units for maternal and child healthcare in urban area than in rural areas.

With respect to marital status, women in marital unions are associated with higher access to maternal health care hence more likely to use caesarian section than single women. In her work among adolescents in western Uganda, Asimwe (2010) argued that the number of antenatal care visits was a function of marital status. More married mothers seek antenatal care services compared to unmarried women. This is because married women can easily get financial and moral support from their spouses. Financial constraints and lack of social support-structures can limit access to quality maternal health services.

Economic stability is an important aspect in health care delivery and utilization. The international community and the national government have prioritized access to affordable quality maternal care irrespective of the socio-economic status of the population. However, socio-economic barriers continue to limit access especially among the poor across the globe. A global study conducted in more than 50 countries showed that on average, more than 80% of caesarian deliveries were among rich women compared to only 34% in poor women (Victora *et al.*, 2011) which was primarily due to affordability and access to relevant

information. This was affirmed in another study done in Ethiopia by Dagne (2010) that revealed an association between household wealth and caesarean section use.

Women in the rich wealthy groups are able to afford the higher cost associated with caesarian birth compared to those in low earning category (Ochako *et al.*, 2011). This was triangulated with study results from India in which women of medium and high standards of living odds of delivery using caesarian section were 1.4 times and 2.3 times more than those women with low standards of living respectively (Ruckley *et al.*, 2012). This shows the need to empower women in terms of education and financial capabilities in the society. This would enable them to make wise decisions concerning their choice of mode of delivery hence leading to better maternal and neonatal outcomes. This is even more important among the Muslim community in which a woman is considered a home-maker with limited opportunity for educational empowerment which limits their discretionary ability in terms of care choices and other life issues.

According to Chanza *et al* (2012) who conducted a study in Malawi on factors affecting the choice of home delivery, women who are housewives and have limited or no access to resources have problems in making mode of delivery choices. They have no ability to make decisions in their marital homes. They are compelled to rely on their mothers' in-law decisions on their pregnancy care as well as modes of delivery. Lack of resources also limits transport even if maternal services are offered free. Lack of income is a known barrier to delivery by Caesarian section.

Religion has also been linked to use of maternal health care services. In another study by Kamal (2013) in Bangladesh on preferences for institutional delivery and caesarean sections, it was shown that religious influence on mode of delivery was dependent on one's faith. Among Christians, caesarian delivery is not prohibited as long as it is done under medical advice to enhance life of the mother or to prevent loss of life of the unborn. However, among women who believe in African traditional religion, caesarian section is not allowed rather, traditional birth assistance is more celebrated and normal vaginal delivery. Among the Muslims, birth is expected to progress normally as planned by God. Caesarian section is not encouraged even with medical advice. Even in emergency situations, they advocate that it should not be done because the life of the mother is the will of God. They believe that, if it is

God's will for the mother to die, caesarian section will not prevent it (Abera and Belachew, 2011). This explains the low acceptance of caesarian section among Muslim women.

In a study cited in an Ethiopian Demographic and Health Survey, it was found that individuals professing Catholic, Muslim and Protestant faiths tended to use more maternal health services than those following traditional beliefs (Mahoney *et al.* 2010). In evaluating the effect of religion on use of health services in Ethiopia, Dagne (2010) found out that women who followed traditional beliefs had a 50% lower chance of receiving antenatal care compared to those who followed Catholic faiths led to increasing in home delivery and associated complications. Further, a study by Abera and Belachew (2011) observed that Muslim mothers sought lesser assistance from medical institutions than non-Muslim mothers. This was attributed to the stout religious beliefs, cultural norms and traditional practices which celebrate cultural practices as opposed to modern practices. Muslim husbands were also reported not to permit their wives to go to doctors or outside their home for breach of privacy.

Maternal delivery choice becomes more challenging in settings where mothers refuse to be examined by male health practitioners. For instance, in Bangladeshi, socio-cultural barriers make women to be unwilling to be examined by male physicians and sometimes by unfamiliar nurses in healthcare facilities. Unfortunately, health facilities in Bangladesh still lack in sufficient female health personnel (Kamal, 2013). There is also increasing demand for medical care for women to be provided by women. This can also be a contributing factor for the low rate of skilled-birth rates in Wajir although there is no authoritative study to support this deduction. Notably, user fees have always been shown to hurt poor people more than the rich. It prevents them from gaining access to needed healthcare service including maternal health services hence limiting the likely chance of benefiting from caesarean delivery. This was affirmed by several reports which have shown that utilization of services fell after user fees were introduced (Arthur, 2012).

2.3.2 Cultural Factors

Culture and values of a society contributes greatly to the decisions, behaviours and practices adopted by a community as well as an individual. For instance, according to a conference conducted in America comprising society for maternal-fetal medicine and American college

of obstetricians and gynecologists workshop, mothers' value vaginal delivery for it is celebrated by the community as a sign of feminine, strength and ability to undertake more challenging motherhood roles. It is also viewed as an important indicator of rite of passage into motherhood (Spong *et al.*, 2012) which has affected acceptance of modern delivery methods for fear of ridicule and stigma from community. As a result of a study on socio-cultural factors, gender roles and religious ideologies contributing to Caesarian-section refusal in Nigeria by Ugwu and de Kok (2015) reported that it is important to appreciating socio-cultural interpretations in the delivery process to help mothers in making an appropriate decision. This considers the place of gender norms and power-relations in health interventions of choice of delivery.

In some instances, mothers consult a faith healer to advice on caesarian section birth who may give controversial and conflicting results to the extent of even invoking a curse spell if a contrary decision is made. These healers advocate the relevance of vaginal delivery as a 'proper' woman's mode of delivery linked to 'natural' birth (Spong *et al.*, 2012). This was acknowledged in a study conducted in Kenya by Mokuia (2014) mainly because they don't fully understand and appreciate the underlying implications especially where pregnancy and delivery complications are a likely outcome. In this situation, the risk of being seen as a 'failed' woman and 'failed' wife is thus heightened which contribute to caesarian section refusal and strong options for normal vaginal delivery irrespective of the impeding dangers.

A study by Ochaku (2011) found out that women beliefs and perceptions on health problem influenced choices of desired appropriate and meaningful remedies. The practices of seeking for alternative health interventions seem to be culturally more appealing to many women especially those from society with higher regards to cultural norms and values. Participants in Ochaku's study also identified fears associated with pregnancy and delivery as a factor contributing to seeking for alternative health interventions resulting to these women seeking for protection from the service providers like traditional medicine men. In return, the traditional service providers encourage them to choose normal delivery for the spirit would give them protection and ability for safe delivery.

However, some religion appreciate the importance of biomedicine, medical advances and professional need for caesarian section but others don't ((Liu *et al.*, 2013). They advise women against caesarian section and any other modern practices including family planning.

This cause refusals and delays in giving consent when an emergency strikes which increases risk of complication and even death of both the baby and mother. They promise that alternative methods based on faith and prayers can make vaginal delivery achievable (Liu *et al.*, 2013). However, success is being made in integrating traditional and religious values with modern health care. However, challenges still remain due to lack of proper information and community engagement in dispelling the beliefs, values and myths. In addition, some cultural and religious inclination is very strong and this will require gradual change. However, there is no relevant documentation on role of cultural factors on choice of delivery methods among women in Wajir County.

2.3.3 Hospital related factors

Health care reforms and increasing complications in obstetric care and care outcomes has resulted in increase of hospitalizations and skilled birth attendance across the world including Kenya. A study conducted by Victoria *et al.* (2011) in Brazil indicated that perceived quality and capacity of a health facility influences mothers' decision on service utilization such as mode of delivery. Findings of a study done in China by Tian *et al.* (2014) showed that health care service delivery characteristics make a significant contribution on the maternal choices for mode of delivery especially Cesarean section. This is because mothers need the assurance that the facility has skilled providers and resources to conduct the operation safely and successfully.

A study by Liu *et al.* (2013) who conducted a study in Argentina on preferences of mode of delivery noted that in private health facilities, women complained about unnecessary caesarean section being performed with an aim of rushing deliveries to create beds for new admissions hence the importance of being careful in choosing a service provider. Mothers prefer a facility which shares the woman's "ideology", 'wishes' and "style" and is ready to establish a good rapport with her. Once the mother has chosen the right service provider, she will be assured of good professional decisions in her care in which the alternative delivery method would have been chosen as a last option measure, to the satisfaction of the mother.

However, Ochaku (2011) found out that mothers in public health facilities did not have the option of choosing their service providers even when they expressed mistrust towards their service providers due to poor quality of care. They also have a notion that nurses and doctors often underestimate client's pain or suffering. Participants told stories of women whose

complaints and requests were ignored. This eventually led to complications; many a times of permanent nature with severe harm to the baby or mother. This makes mothers avoid public health facilities in future deliveries choosing to even deliver home and face the outcomes courageously.

In a study conducted by Mrisho *et al.* (2007) in Tanzania, it was shown that staff attitudes and poor treatment experiences, including lack of privacy in the health facilities, discouraged women from delivering in health facilities hence preferring vaginal delivery at home. Similarly, Abebe *et al* (2012) in their study conducted in rural parts of Nigeria women to be dissatisfied with quality of maternal services in health facilities. From another perspective, failure to perceive need for delivering subsequent children in health facilities may result from experiences of delivery at home or even within the health facility. A study in Nyanza province in Kenya found out that lower level facilities were perceived to provide poorer quality maternal services than higher level health facilities (Kitui *et al.* 2013). Mothers using such facilities are more likely to believe that health facility deliveries are unnecessary increases chances for home delivery. Government facilities are also associated with frequent stock-out of necessary medicines and hence perceived to lack capacity to offer quality services.

Health education during pregnancy (antenatal) and childbirth may improve knowledge, perception and evaluation of the health facility for delivery. Improvement in delivery services, responsiveness to the needs of mothers and quality of care for women during delivery will be of added value in the mothers' decisions (MacMillan, 2010). If Barriers to delivery services are addressed effectively, it will also improve maternal health seeking behavior. For instance, a facility which is perceived to have highly experienced health care providers motivates mothers to choose to deliver in the facility without fear of maternal outcome and mode of delivery suggested. For instance, in a study conducted in Wareng'District in Uasin Gishu County, Kenya which was perceived to have well experienced and qualified birth attendants, 60.4% of the births were done by Caesarean (Mokua, 2014). These mothers had a higher willingness's of accepting caesarean section compared to 44% of those reported in the Kenya and 33% in Rift Valley Province (NCAPD *et al.* 2011). Mothers who make frequent visits to health facilities and are satisfied with skills

of health personnel are more likely to have the right mode of delivery as compared to those who get attention from incompetent health personnel.

In a study by Mokuu (2014) in Kenya, perceived comprehensiveness of services in a health facility also determines the mode of delivery among pregnant women. For instance, most women in Mokuu's study delivered in Moi Teaching and Referral Hospital. Although there is a district hospital that is part of the catchment, more mothers preferred to deliver in Moi Teaching Referral Hospital because of availability of better facilities. They said that any complications could have been better attended there than in lower facilities.

The availability of qualified nurses and doctors capable of counseling and guiding pregnant women has also been linked to choice of mode of delivery of mothers. Ecker (2013) revealed that women with high-risk pregnancies and identified problems were more likely to be advised on need for more consultations and investigations. Increased use of ANC services also make mothers to increase care-seeking visits which enhances knowledge on appropriateness of delivery mode. This includes greater openness and acceptance for caesarean delivery. Adolescents who have greater numbers of prenatal care visits are more likely to have caesarean section than those who don't attend the clinic so frequently (da Gama *et al.* 2012). Greater number of appointments with medical professionals may thus give more opportunity to convince the patient on the best mode of delivery. Institutional delivery can thus be promoted by such programs as proper antenatal care and availability of skilled service provider for counseling and other service provision requirements.

Certain factors have significant negative association with cesarean section which promotes greater desire for normal vaginal delivery. The factors include presence of newborn intensive care units, maternal-fetal medicine subspecialists, presence of obstetricians and gynecologists and high delivery volumes. However, urban location, availability of a family physicians and presence of round the clock anesthetist have been shown to increase preference for caesarean delivery mode (Davidson *et al.*, 2012). Although availability of adequate theatres equipped with standby nurses and the presence of anesthetists and medical officers determines the mode of delivery among pregnant women in hospital, the hospital may be overwhelmed and refer mothers to other hospitals which may affect their choices (Aberese-Ako *et al.*, 2015).

2.3.4 Knowledge, Attitude and Practice Factors

Mothers' attitude and perceptions vary across different types of delivery modes. According to Alaei and Motamedi who conducted a study in the city of Kerman, 66.7% of women regarded vaginal delivery as a natural and acceptable mode of delivery (Yazdizadeh *et al.*, 2011). This was acknowledged in a study conducted in South Korea which reported that despite the 40% rate of CS, majority of the women had more favorable attitudes towards vaginal delivery than CS. Vaginal delivery is described as a physiologic process; mothers perceive vaginal delivery to give one a favorable position and interventions. Providing adequate medical equipment and resources required in aiding vaginal delivery for mothers has been associated with a higher percentage of women with positive attitude towards vaginal delivery (Lavender *et al.*, 2012).

It has been observed by Shiferaw *et al.* (2013) that the rate of CS on mother's request in uncomplicated pregnancy is increasing to 22%. According to the study, 21% of the total cesarean deliveries performed in public and private hospitals were CD on maternal requests. The most common reason for CD maternal request was the fear of pain (35.5%) (Fatemeh *et al.*, 2014). Increasing maternal knowledge about pain-relief methods during labor and providing equipment and certified personnel to optimize obstetrical anesthesia in both public and private hospitals can lead to reduction of maternal fear of pain and encourage more mothers to prefer vaginal delivery (Yuen *et al.*, 2014)

Klemetti *et al.* (2010) who conducted Cesarean section delivery among primiparous women in rural China indicated that fear of childbirth pains make women to request for Cesarean section even without any medical indication. Fear affects emotional health of pregnant women negatively and raises the likelihood of caesarian section (Garcia *et al.*, 2015). In another study done in Iran, 43% of the deliveries were by Cesarean section. Most of these were due to fear of childbirth pains (Etghayi *et al.*, 2010). For Etghayi's, 81% of the women participating in her study considered vaginal childbirth as frightening. This finding indicates the need to ensure closer and regular monitoring of pregnant women during the pregnancy period including providing emotional support to ensure decisions on mode of delivery are not rushed against the will of the mother. This was reaffirmed by Mokuia (2014) who noted that women requesting for selected caesarian section did not really intend to undergo the

procedure. They instead wanted to be helped so as to be mentally fit to go through a vaginal childbirth.

Community and individual women knowledge and awareness on reproductive health issues and delivery modes can determine their perceptions, attitudes and behaviours or practices towards different types of delivery methods. Knowledge is key in enabling clients embrace positive attitudes towards a care process or anticipated care outcome (Ruckley *et al.*, 2012). A study carried out in Iran by Fatemeh *et al.* (2014) showed that the knowledge status about the modes of delivery was not significantly different between mothers attending private and public hospitals and only a small percent of mothers had good knowledge status. It seems that a higher education degree is not necessarily accompanied by higher reproductive knowledge status. This may represent the lack of effective reproductive health education. In a study in Nigeria, 15% of pregnant women who presented for prenatal care were aware of their rights to request CS, but only 2.4% had requested a CS. Their reasons for this request were: long-term infertility, repeated miscarriages, and high maternal age at first pregnancy.

Cesarean sections are associated with fear of vaginal delivery due to pain of labor, past negative childbirth experiences and concerns for possible resultant rectal and urinary system damages. These negative outcomes may discourage mothers and prefer the pain of normal vaginal delivery (Ecker, 2013). Another reason for inability of mothers to have vaginal delivery was low self-esteem related to fear of childbirth among pregnant women (Khorsandi *et al.*, 2012). It is important to identify expectant mothers who have fear for vaginal childbirth so as to give those help and support as most appropriate.

Verbal persuasion and provision of relevant information to support their decisions can enhance their confidence. Another study showed that 86% of women had a second thought about their caesarian section requests and returned back to vaginal childbirth. Educational intervention would be effective in reducing the rate of unnecessary primary caesarean section. Reviews show that when pregnant women develop positive attitude towards pregnancy and pain, they do not consider the experience as terrible (Khorsandi *et al.*, 2012) which reduces the fear of vaginal delivery. Therefore, providing counseling sessions to prepare pregnant women to deal with delivery in a better way is important in helping mothers make informed decisions. As a result, negative attitudes and perceptions, such as fear of child-birth are turned into positive ones.

Considering the high rate of selected caesarian sections in some countries and the most important factors influencing them, especially fear of vaginal delivery, it is suggested that women having a tendency to caesarian section be provided with counseling in hospitals and clinics (Arikan *et al.*, 2011). Prenatal education and support program should be offered to pregnant woman by obstetricians and midwives. This suggestion is reaffirmed in a study done in Nigeria by Ijadunola *et al.* (2010) in which 15% of pregnant women who presented for prenatal care were aware and knowledgeable of their rights to request for caesarian section. However, only 2.4% requested for it. Their reasons for this request were: long-term infertility, repeated miscarriages and high maternal age at first pregnancy. Most of the women in the study believed that only the physician should determine the mode of delivery which partly indicates lack of relevant knowledge and their ignorance on patient rights in choice of delivery. The reasons why women do not insist on caesarian section were physicians' awareness of the complications of caesarian sections, family fear of the complications, fear of being given negative answers by the physicians and not being aware of their own rights for requesting to have caesarian section.

Women with only one child are reported to hold stronger negative attitude towards caesarian section than those with more children (Lassi *et al.*, 2014). This finding could be attributed to a wrongly perceived outcome of being unable to give birth again when one is operated. Perceptions surrounding caesarian delivery have a significant role in the decision making process in childbirth. Some women are increasingly inclined towards options for caesarean section deliveries for non-medical reasons which include fear of labor pain, concerns about date or time of birth that are traditionally believed to be auspicious and the belief that delivery by caesarean section ensures protection of the baby's brain. These results reflect conflicting results presented by studies conducted in different context which could be majority due to difference in study context in regards to their demographics, prevailing socio-economic conditions and literacy levels (knowledge and awareness) among the study population.

2.4 Gaps in Literature Review

This chapter has reviewed relevant studies done in Kenya, sub-Saharan Africa and worldwide. The studies have provided sufficient background and basis for the study and also provided a sufficient basis for identifying gaps in available body of knowledge. The review

has shown that VD is the most common delivery mode but CD is also increasing being used as a delivery mode especially in developed countries. However, use of CD is still low in developing countries due to many reasons ranging from cultural barriers to limited knowledge on delivery modes. Despite the wealth of studies done elsewhere with good insight on preferences for modes of delivery, most of these studies are done in developed countries with limited publication in developing countries especially sub-Saharan Africa. Specifically, there is limited studies undertaken on mode of delivery in context experiencing greater health inequity and disparities especially marginalized areas such as Wajir County which faces unique challenges such as poor health care infrastructure, roads, resource limitations, cultural and religious barriers to formal health care and limited health care delivery points.

There is also gross and persistent information gaps on utilization rates for different modes of delivery and determinants of choices in similar context. Further, the reviewed findings are not only inconsistent on some of the determinants influencing mode of delivery but also presents significant limitation for generalization in Wajir County. In addition, many women in Wajir County are Muslims whose religion, perceived cultural as well as health care values, could have a significant influence on individual ability, to choose delivery mode even when the quality is good and the services are accessible. This has not been well and properly articulated in studies done regionally and globally hence a gap to be studied. Therefore, due to these unique differences and lack of well-known/published body of evidence on determinants of preferences for delivery methods, this is of prominent significance to maternal care and delivery practices in among Wajir mothers, hence the knowledge gap which was investigated by this study.

2.5 Theoretical Framework

2.5.1 Health Belief Model

This study was grounded upon the Health Belief Model (HBM) proposed by Rosentock (1974). The HBM states that “the perception of a personal health behavior threat is itself influenced by at least three factors: (i) general health values, which include interest and concern about health; (ii) specific health beliefs about vulnerability to a particular health threat; and (iii) beliefs about the consequences of the health problem. Therefore, HBM

provide theoretical basis for understanding issues that influence mothers child birth decisions and identify relationship between health related beliefs and maternal behaviors which can help in predicting the possibility of a mother choosing particular mode of delivery (Figure 2.1). The health belief model is further elucidated by the following key descriptors:

- i) **Perceived Susceptibility:** Perceived susceptibility means that every individual has his/her own view of the probability of encountering a condition that would unfavorably influence one's health. The more a person believes he or she is at great risk, the more likely that person is to adopt a particular health related behavior to minimize the risks. People change generally in their impression on susceptibility to child birth complication. For example negative experience in previous delivery, could affect a woman's preference for a particular mode of birth in subsequent delivery, due to the belief that the negative experience will be repeated again. The knowledge of the susceptibility of a woman to lose her life during labor if the safest mode of delivery is not followed can propel individual pregnant mothers to seek appropriate information from obstetrics personnel during delivery to secure herself and the unborn baby, this in itself make mothers to have an informed opinion when it comes to choosing the most appropriate mode of delivery.
- ii) **Perceived Severity:** Perceived severity alludes to the beliefs a person holds concerning the impacts of child birth and eventual outcome. Given that pregnant mothers present with various obstetrics history of different levels of severity that would lead to obstetric complication, such perception can propel pregnant mothers to choose any mode of delivery available depending on the obstetric advice offered and the chances of survival in relations to available options. If it is believed that there are complications associated with certain mode of delivery, women are more likely to express a preference to alternative mode of delivery, so as to reduce their risk. These impacts can be considered from the perspective of the challenges and outcome that a child birth would make. For example, pain and problem anesthesia with caesarean section delivery and birth trauma experienced with vaginal delivery
- iii) **Perceived Benefits:** Perceived benefits mean that one's belief that outcomes can be positively affected by engaging in particular health behavior. The direction of action that an individual pregnant mother picks will be impacted by the knowledge, attitude, and essential obstetric care given during the antenatal care visit. In this study, this includes

better health in the future, avoidance of death, and avoidance of still births and reduction of co morbidities in CS indicated cases like pregnant mothers with Female Genital Mutilation, Teenage pregnancies.

- iv) Perceived Barriers:** Refers to individual perception of the difficulties preventing them from following a specific health related behavior. However, action may not happen, despite the fact that an individual may believe that the advantages to making a move are successful. This might be because of hindrances. The desire for a woman to choose a particular mode of delivery is hindered by existing medical contraindication. For example a woman with Cephalo pelvic Disproportion (CPD), mal-presentation, and fetal macrosomia will not be able to undergo vaginal birth.
- v) Cues to Action:** These are factors that help individual make health related behavior. An individual's perception of the levels of susceptibility and seriousness give the pregnant women the power to act. Mother's attitudes and beliefs towards a particular mode of delivery are influenced by advices and stories that they hear from relatives and friends. Women opt for alternative mode of delivery after hearing negative stories about a particular mode having concern that they might have similar experience after they gave birth. In some cases social cultural issues may present as alternate cues to action in which case it would be beneficial for pregnant woman to be taken through a thorough cost benefit analysis before weighing the available options and the severity of child birth outcomes.

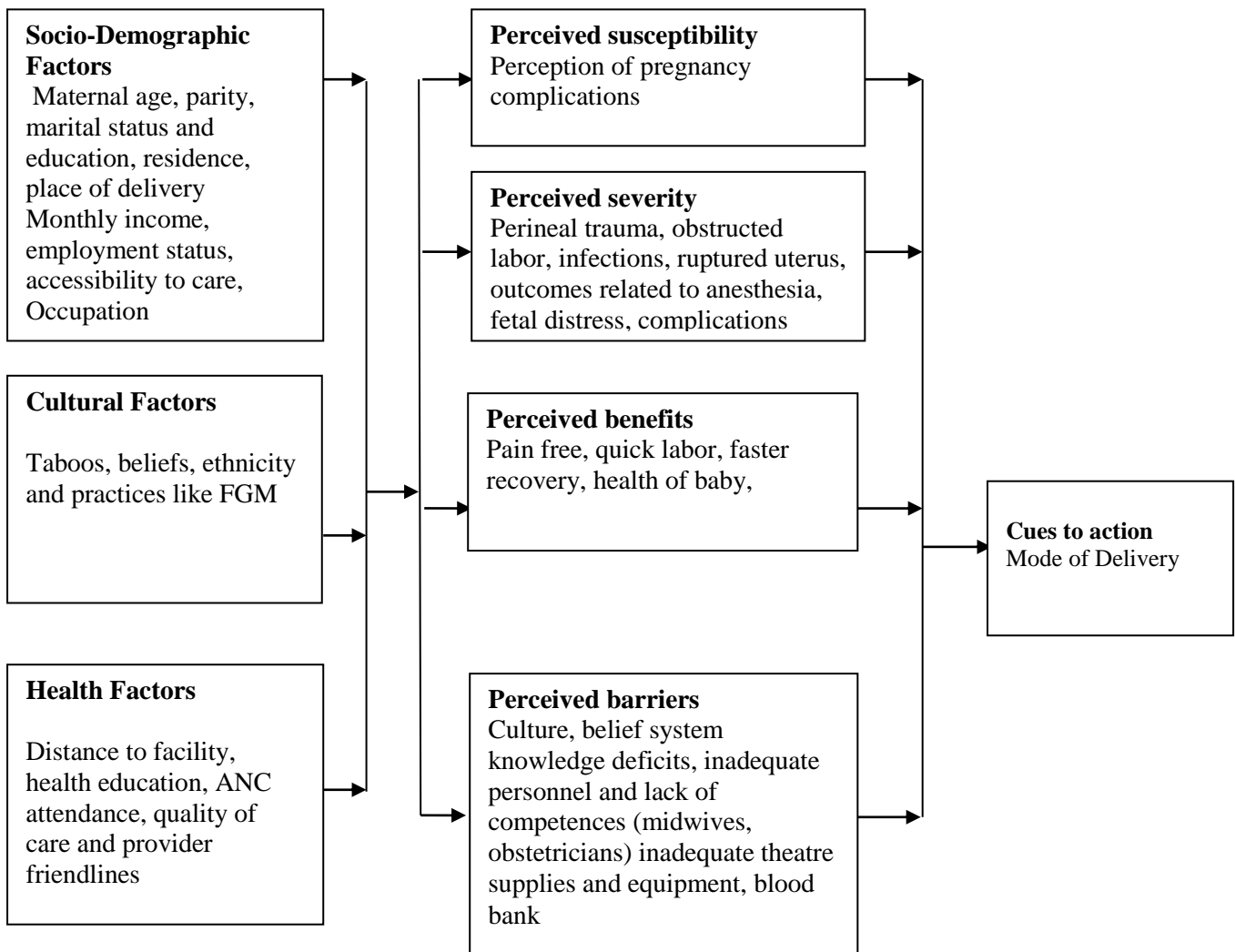


Figure 2.1 Theoretical Framework (Adopted from Rosentock (1974).

2.6. Conceptual Framework

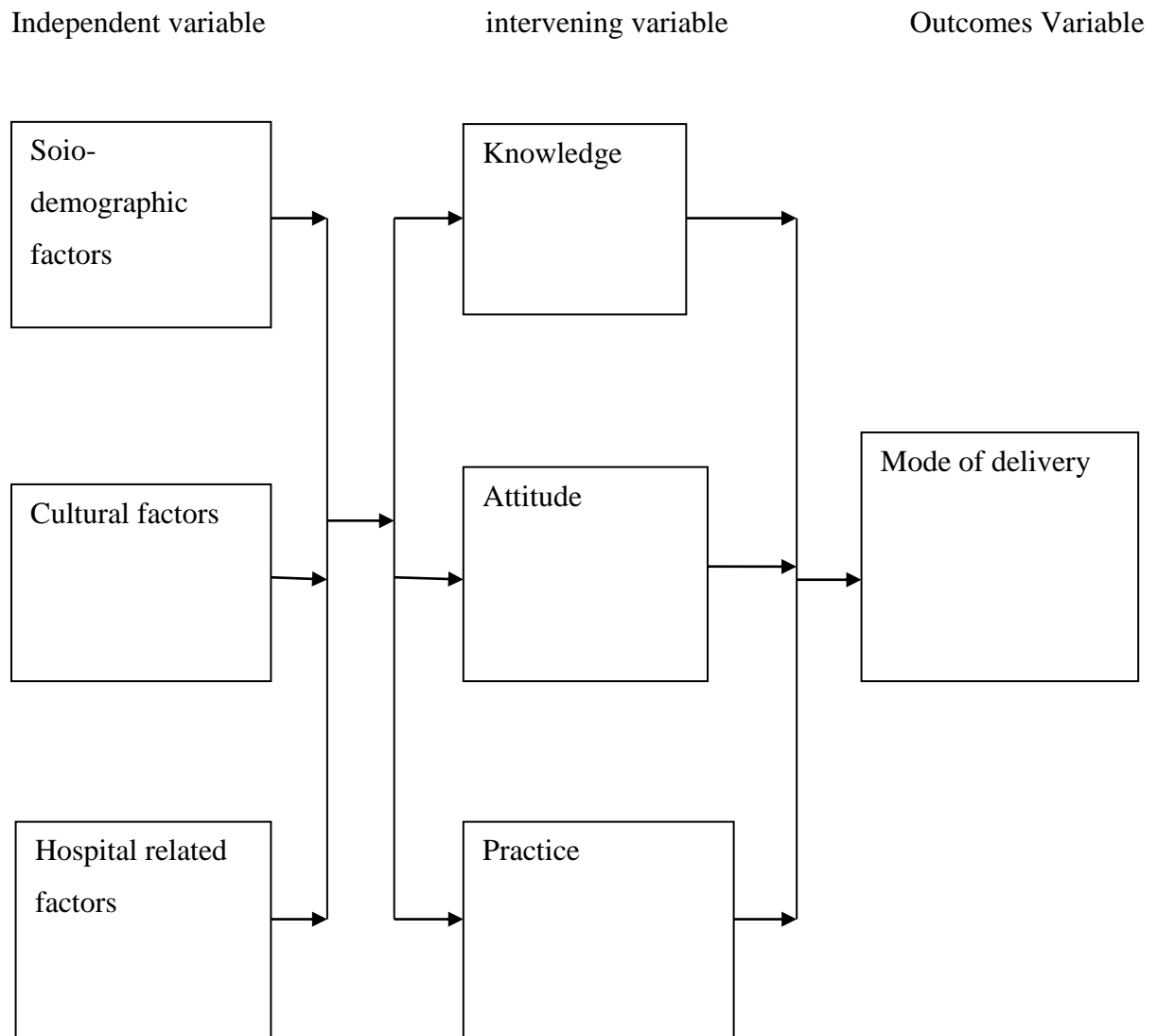


Figure 2.1 *Conceptual framework of the study*

2.7 Operational Framework

This framework shows the relationship between independent variables, intervening variables and dependent variables as shown in Figure 2.2.

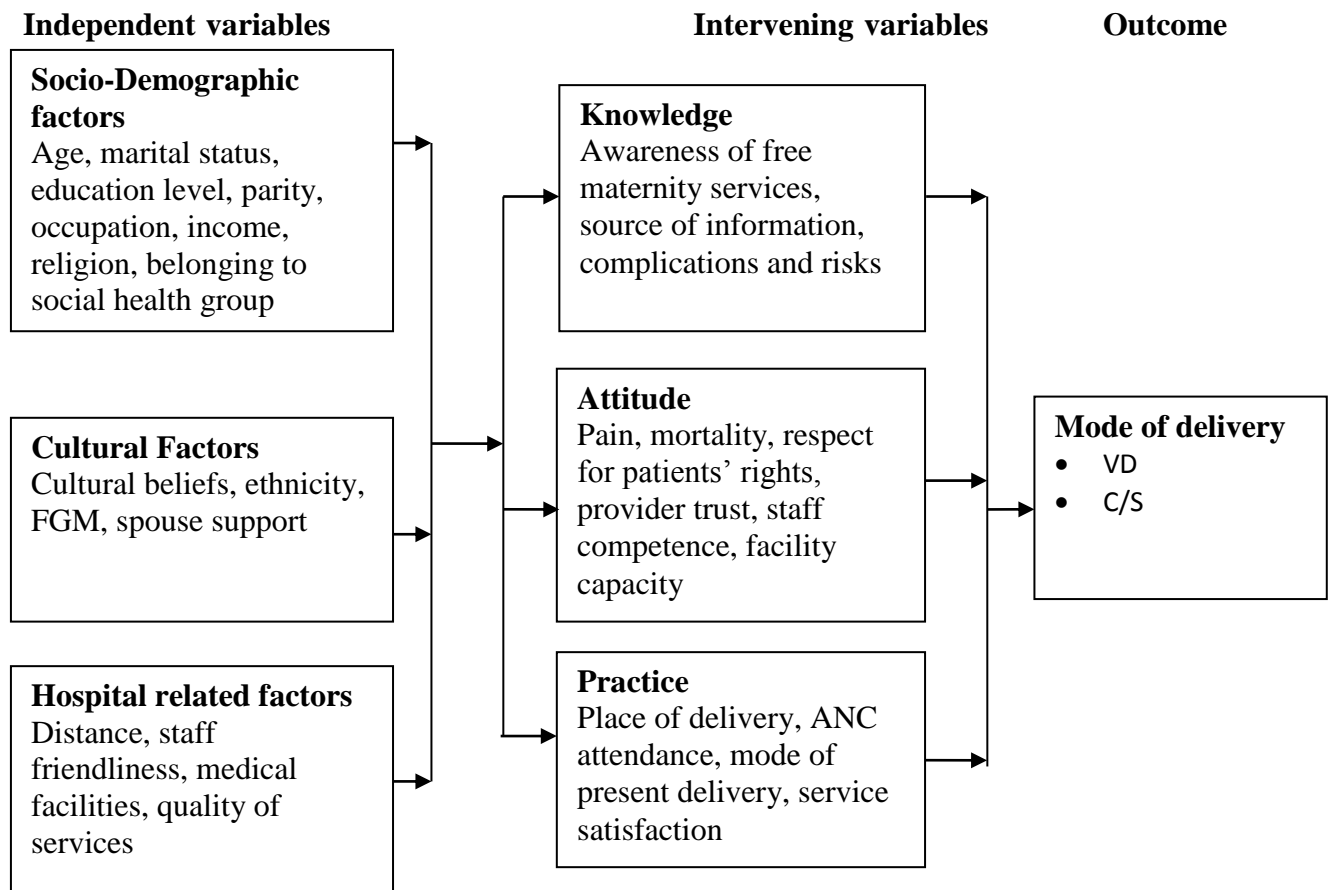


Figure 2.2 Operational Framework of the Study

CHAPTER THREE: METHODOLOGY

3.1 Study Design

A hospital based descriptive, cross-sectional study was conducted for two months (1st May-2nd July, 2017) among 178 postnatal mothers at Wajir County Referral Hospital. Both quantitative and qualitative approaches were employed to gather the required information.

3.2. Study Area

The study was conducted in the post natal ward of Wajir County Referral Hospital. This was the only county referral hospital that served the entire county, located in Wajir East Constituency; near Wajir police station. The hospital occupies about an acre of land. It offers both outpatient and inpatient services which include preventive, curative and rehabilitative services. It had 6 inpatient wards and total bed capacity of 83 with an average annual inpatient turnover of 8,341 (Wajir Hospital Statistics, 2015). The average annual outpatient workload was 6,700 (inclusive of both adult and children).

The obstetric department had three inpatient wards which included Antenatal/Labor ward, post natal and newborn unit with bed capacity of 28 and average bed occupancy of 71%. The unit was manned by 15 nurse-midwives, two (2) medical officers. There was no obstetrician / gynecologists. In 2015, the unit handled 2,011 admissions and 1,993 deliveries comprising; 1,800 Vaginal Delivery, 192 caesarian section (189 emergency, 3 elective) and 1 breech as annual workload (Wajir Hospital statistics, 2015). The major indication for caesarian section in the hospital was obstructed labor secondary to Cephalo Pelvic Disproportion.

3.3. Study Population

The study population comprised of all postnatal mothers who gave birth at Wajir referral hospital. Medical superintendent, nurse-midwife in charge of maternity, nurse service manager and one senior midwife working in postnatal ward in the post-natal ward were also included as key informants.

3.4 Inclusion and Exclusion Criteria

3.4.1 Inclusion Criteria

All postnatal mothers who gave and informed consent to participate in the study

3.4.2 Exclusion Criteria

Mothers who refused and or were unable to give informed consent (mothers who were in critical conditions).

3.5 Sample Size Determination

Sample size was calculated using the formula below (Fisher, et al., 1998)

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

Where:

n = the desired sample size (when population is more than 10,000)

Z = the standard normal deviate usually set at 1.96, which corresponds to the 95% confidence interval.

P = the proportion of postnatal mothers, which was set at 50%. The proportion of postnatal mothers was taken at 50% as there was no study done related to such topic.

d = the degree of accuracy desired (absolute precision), which is 5.0% (0.05).

$$n = \frac{z^2 P(1-P)}{d^2}$$

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 384$$

Since the total population during the study period was below 10,000, sample adjusting was done using the following formula:

$$nf = \frac{n}{1 + n/N}$$

Where:

nf = The desired sample size (when population is less than 10,000)

N = Total population (around 332 postnatal mothers gave birth in 2 months period, the time which is needed to collect the data).

n = The desired sample size (when population is more than 10,000) =384

$$nf = \frac{384}{1 + \frac{384}{332}} = 178$$

Hence 178 subjects were needed for the study. Since follow up was not needed in the study, attrition rate was not necessary.

3.6. Sampling method and recruitment process

The hospital register showed that about 332 mothers give birth at the study area, Wajir Hospital. Accordingly, the study was designed to be performed for 2 months during which time an estimated 332 mothers give birth. Systematic random sampling method was used to select study participants. The estimated number 332 postnatal mothers in 2 months period was divided by the minimum adjusted sample size (178) to give the sampling interval of 2. A serialized list of women who had delivered was compiled each day using the postnatal admission register. The first postnatal mother from the register to be included in the sample was chosen randomly by picking one of two pieces of paper named for the first two participants. After that, every second mother who gave birth was recruited in the study until the desired sample size was attained. After the participants consented to participate in the study, they were interviewed using a pretested semi-structured questionnaire.

Purposive sampling was used to select participants for Focused Group Discussions (FGD) which was done after administering survey questionnaire. A total of nine mothers participated in the discussion. Purposive sampling was used to select four (4) key informants for the study. Key informants comprised informed, knowledgeable and experienced persons who were conversant with the subject of the study. These included medical superintendent, midwife in charge of maternity, nurse service manager and one midwife attached to the maternity.

3.7 Data collection tools

3.7.1 Questionnaire

Pre-tested semi-structured questionnaire was used to collect quantitative data (Appendix V). The following quantitative data was collected: socio-demographic, cultural practices hospital related factors and KAPs. The study questionnaire was administered by two trained research assistants who assisted the mothers in filling the responses.

3.7.2 FGD and Key informants Guide

Focused group discussion guide (Appendix VII) and key informants interview (Appendix VI) guide were used to collect qualitative data. The guides comprised questions on socio-demographic, cultural practices and hospital related factors and KAPs.

3.8 Pretesting of the study Instrument

The study questionnaire was pretested to enhance its validity and reliability. Pretesting was done at Habaswein Sub-County Hospital in Wajir County Referral Hospital which has almost similar infrastructure and population/demographical features. A total of 18 post natal women, comprising 10% of the study sample were randomly selected and used to pre-test the study questionnaire.

3.9 Training of Research Assistants

Two research assistants who had a diploma in nursing, conversant with local language and proficient in data collection from patients admitted in a hospital were selected to assist in data collection. The research assistants were re-trained and orientated in the requirements of the research for two days.

3.10 Data management

All questionnaires were stored in locked cabinets throughout the study and accessed only by the researcher so as to ensure confidentiality and to avoid data loss. After data collection, a double entry of the same data was done for accuracy purposes. Data was entered using Microsoft Excel. The data was stored in the computer under password. Data cleaning was

done whereby missing values, extreme values and inconsistencies were identified and corrected. After cleaning, the data were then exported to SPSS software version 20.0 for analysis. Coding and verification of the data was done for easy manipulation, analysis and presentation. Data was presented using tables and graphs showing frequency distribution for independent and dependent variables.

3.11 Data Analysis

Quantitative data was analyzed using SPSS version 20. Descriptive statistics were computed for all relevant variables. Descriptive analysis was done using means, proportions, frequencies, cross tabulation and Pearson's chi-square test with corresponding 95% confidence intervals (CI) computed to find association between variables. Qualitative data was analysed thematically using Nvivo software. Key insight, patterns and relationships were drawn from the qualitative themes and used to validate and enrich the quantitative findings.

3.12 Ethical Considerations

The study was approved by the University of Nairobi-Kenyatta National Hospital Ethics and Research Committee (Appendix VIII). Permission to conduct the study at Wajir County Referral Hospital was obtained from the County Government of Wajir, Department of Medical Services (Appendix IX). The details of the study were explained to each study participant. An informed consent was obtained in writing before recruiting each subject into the study (Appendix III). The participants retained the absolute right and freedom to decline from participating or withdrawing from the study at any time with no consequence to them.

To ensure confidentiality of participants, information, anonymous typing was used whereby the name of the participants and any participants' identifier were not written on the questionnaire.

3.13 Dissemination plan

The findings of the study will be presented to the University of Nairobi, School of Nursing. It will also be published and presented in conferences and workshops of relevant stakeholders on this topic. The study findings will also be shared with Wajir county hospital administration to inform relevant planning and programming.

3.14 Limitation of the study

The sample of this study was limited to a sample of post-natal women drawn from Wajir County Referral hospitals. The study was a hospital-based which limited inclusion of women with home deliveries. A community-based study would have captured well a significant proportion of post-natal women in the county who don't deliver in hospitals. Therefore, the study cannot be conclusively generalized to women practicing home deliveries. In addition, generalization to other counties especially marginalized counties such as Wajir County should be done with caution due to variations in context of care across such counties including variations in extent of health infrastructure and development.

CHAPTER FOUR: RESULTS

4.1 THE SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

The mean age of the respondents was 28.8 years. Majority 112 (62.9%) of the respondents were aged between 20-39 years. Regarding marital status, majority 150(84.3%) of the respondents were married while 15(8.4%) were single. In relation to parity, majority 70(39.3%) of the respondents had 1-3 children. Concerning educational level, most 90(50.6%) of the respondents had no formal education. Majority of the respondents were house wives at 116(65.2%) and Muslims at 153(86%). Regarding income level, majority of the women 72(40.4%) were earning below Ksh 20,000, majority 119(69.9%) of women did not belong to any social health group (See Table 4.1 below)

Table 4. 1: Socio-demographic characteristics of postnatal mothers (n=178)

Variables		N	Percent (%)
Age in years	15-19	37	20.8
	20-29	60	33.7
	30-39	52	29.2
	40-49	29	16.3
	The mean age = 28.8		
Marital Status	Married	150	84.3
	Single	15	8.4
	Divorced	11	6.2
	No response	2	1.1
Parity	Primigravida	45	25.3
	1-3 children	70	39.3
	4-5 children	36	20.2
	More than 5 children	27	15.2
Occupation	Self-employed	20	11.2
	Government or private employed	32	18
	Housewife	116	65.2
	No response	10	5.6
Religion	Christian	25	14
	Muslim	153	86
Level of Education	No formal education	90	50.6
	Primary	44	24.7
	Secondary	11	6.2
	Tertiary (University/college)	33	18.5
Monthly Income	Ksh 10,000 and Below	38	21.3
	Ksh 11,000-20,000	34	19.1
	Ksh 21,000-30,000	30	16.9
	Ksh 31,000-40,000	18	10.1
	Ksh 41,000-50,000	30	16.9
	Ksh 51,000-60,000	22	12.4
	No Response	6	3.4
Belonging to social Group	Yes	34	19.1
	No	119	66.9
	No Response	25	14.0

4.2 INFLUENCE OF SOCIO-DEMOGRAPHIC FACTORS ON DELIVERY MODE

The proportion of women who had delivered through caesarean section was higher, 20(54.1%), among younger women aged 15-19 years and older women, 15(51.7%), aged 40-49 years compared to their counterparts who had delivered through vaginal delivery. Therefore, there was a statistically significant association between age and mode of delivery ($p = 0.001$) as show in Table 4.2.

Theme 1: Younger women presents with more CS rates because of under developed reproductive systems. This was cited to increase pregnancy related complications among younger women.

“Most pregnant women here are Somali girls who get married at a very tender age of even 14 and 15 years. Due to their age, their reproductive parts are not very well or fully developed and their pelvic bones are not grown well which increases risks of pregnancy and delivery complications which force them to have CS delivery.” (Key informant No. 1).

Majority of the women who were married, 103(71%), delivered through vaginal delivery while majority of the single, 6 (54.5%), and divorced, 7 (63.6%), women delivered by Caesarean Section. There was a statistically significant association between marital status and mode of delivery ($p = 0.016$) (Table 4.2).

Theme 2: Close family members influence is a major barrier for accepting CS among women. Women required consultation of their husbands no matter the distance before making decision on mode of delivery even during emergency cases.

“I cannot accept CS without consulting my husband or family for permission. Another woman was left by her husband after CS because he said she would bring a curse into the family” (FGD, respondent no. 1).

Findings showed that majority of women, 41(68.3%) with higher parity (from two children and above) had Vaginal delivery, while majority of primigravida, 21(55.3%), had delivered by CS. There was a statistically significant association between parity ($p = 0.003$) and mode of delivery.

Theme 3: Higher parity inspires confidence in home delivery.

“I have been delivering my children at home without any problem. Am comfortable being helped by traditional birth attendant in case of any complication.” (FGD Discussant no. 9).

The number of women who had delivered through Caesarean section increased with increase in level of education. Majority of women with no formal education, 65(72.2%), delivered through vaginal mode compared to those who had formal education. There was a statistically significant association between education level and mode of delivery ($p = 0.007$) (Table 4.2 below).

Theme 4: Education helps women to make informed delivery choices. The study revealed that demystification of delivery related beliefs improves with increase in education.

“Uneducated women tend to have difficult and contradictory beliefs which increases refusal of cs for vaginal delivery” (Key informant no. 2).

The study found that there was no association between religion and mode of delivery. Majority of the Muslim, 102(67.1%) and Christian, 15(60%) women delivered by normal vaginal delivery. However, there was a slight difference in the number of women who had delivered by CS across their religious affiliations. There was no statistically significant association between religion and mode of delivery ($p = 0.616$) (Table 4.2). However, qualitative results indicated religion plays indirect role on choice of delivery mode.

Theme 5: Muslim religion adores vaginal delivery as a sign of virtue signifying womanhood and strength.

“In our religion, you become a woman only when you have vaginal delivery” (FGD Discussant no. 5).

Theme 6: Muslim religion links pregnancy complications to curses. For instance, women are encouraged to seek spiritual (religious) interventions and traditional midwives attendance to avert curse and misfortunes associated with pregnancy complications.

“CS is associated with a curse; when a woman is unable to deliver normally, we call religious leader (sheikhs) to come and pray for us to remove the curse”

(FGD Discussant no. 3).

The mode of delivery had minimal differences across the various income categories. There was a statistically significant association between income and mode of delivery ($p = 0.631$) (Table 4.2).

Theme 7: Dependence of women on their spouse for financial and material support limits their discretion on delivery mode. Results indicated some women to lack fare to hospital for alternative delivery choices.

“Maternal services are free, but we have cases where mothers cannot even afford transport to come here because most of the households are poor. For those who at least have some money, they make it to the hospital, though at times late” **(Key informant no. 3).**

There was an association between social groups of the respondents and mode of delivery. A higher proportion of women who belonged to a social health group, 21(61.8%), delivered by Caesarean section compared to those who delivered through normal vaginal delivery. Belonging to a (health) social group had a statistically significant association with mode of delivery ($p = 0.001$) (Table 4.2).

Theme 8: Use of social health groups provides a platform for disseminating delivery related messages which improves delivery discretions. Results indicated women who had formed social groups to advocate for health practices and choices within the community such as benefit of ANCs, hospital delivery and anti-FGM practices had better discretions on delivery choices. The platform provide an effective learning, sensitization and educative platform for empowering women on delivery-related issues such as demystifying use of CS on medical indications.

“There a social group where we share health information among ourselves. Many of the women in the group have now agreed to come to get delivery services in hospital.” **[FGD Discussant no. 6].**

Table 4.2 Influence of socio-demographic characteristics on mode of delivery

Variable		Delivery Mode		Chi-square Statistics
		Vaginal Delivery	Caesarian Section	
Age	15-19 years	17(45.9%)	20(54.1%)	$\chi^2=18.976$, df=3, p=.001
	20-29 years	41(74.5%)	14 (25.5%)	
	30-39 years	40(83.3%)	8(16.7%)	
	40-49 years	14(48.3%)	15(51.7%)	
Education Level	No formal education	65(72.2%)	25(27.8%)	$\chi^2=13.866$ df=4, p=.007
	Primary Level	29 (74.4%)	10(25.6%)	
	Secondary Level	5(45.5%)	6(54.5%)	
	College Level	4(28.6%)	10(71.4%)	
	University Level	9(60.0%)	6(40%)	
Marital Status	Single	5(45.5%)	6(54.5%)	$\chi^2=8.054$ df=2, p=.016
	Married	103(71.0%)	42(29.0%)	
	Divorced	4(36.4%)	7(63.6%)	
Parity	Primigravida	17(44.7%)	21(55.3%)	$\chi^2=14.452$, df=3, p=.003
	2-3 Children	26(66.7%)	13 (33.3%)	
	4-5 Children	28(87.5%)	4(12.5%)	
	Over 5 Children	41(68.3%)	19(31.7%)	
Religion	Muslim	102(66.7%)	51(33.3%)	$\chi^2=.399$, df=1, p=.616
	Christian	15(60.0%)	10(40.0%)	
Occupation	Self employed	12(60.0%)	8(40.0%)	$\chi^2=4.031$, df=2, p=.132
	Formal employment	15(53.6%)	13(46.4%)	
	Not employed	80(72.1%)	31(27.9%)	
Average Monthly Income (Ksh)	10,000 and Below	9(60.0%)	6(40.0%)	$\chi^2=1.690$, df=5, p=.631
	11,000-20,000	13(36.1%)	23(63.9%)	
	21,000-30,000	21(61.8%)	13(38.2%)	
	31,000-40,000	22(73.3%)	8(26.7%)	
	41,000-50,000	25(89.3%)	3(10.7%)	
	51,000-60,000	16(80.0%)	4(20.0%)	
Belonging to a health social group	Yes	13(38.2%)	21(61.8%)	$\chi^2=14.360$, df=1, p=.001
	No	81(73.6%)	29(26.4%)	

4.3: CULTURAL FACTORS AND THEIR INFLUENCE ON MODE OF DELIVERY

4.3.1 Ethnicity

Most of the women, 90(51%), were Somali as shown in the Figure 4.1.

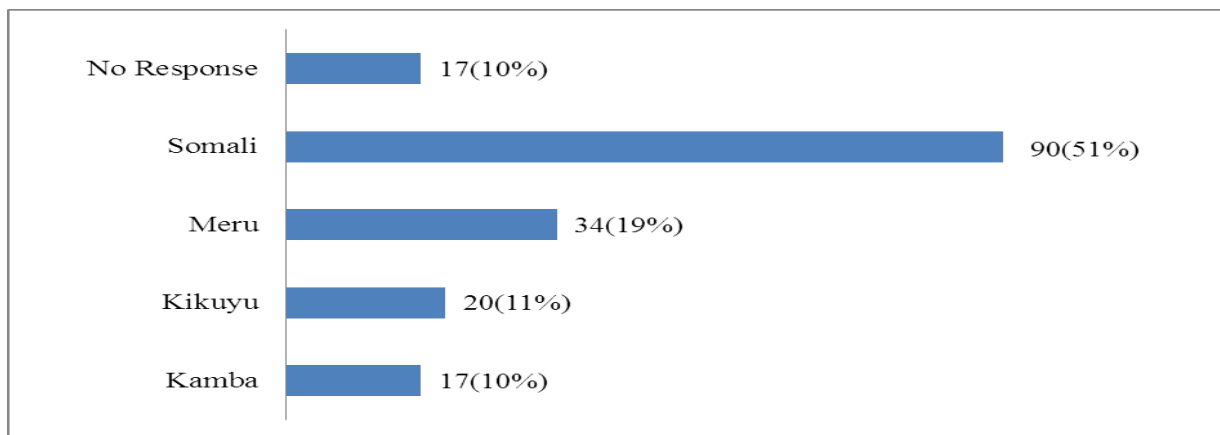


Figure 4.1 Ethnicity of post-natal mothers (n=178)

4.3.2 Existence of prohibitive cultural values

Majority of the women, 101(56.7%), said that they have no cultural beliefs which favor certain delivery mode as shown in Figure 4.2.

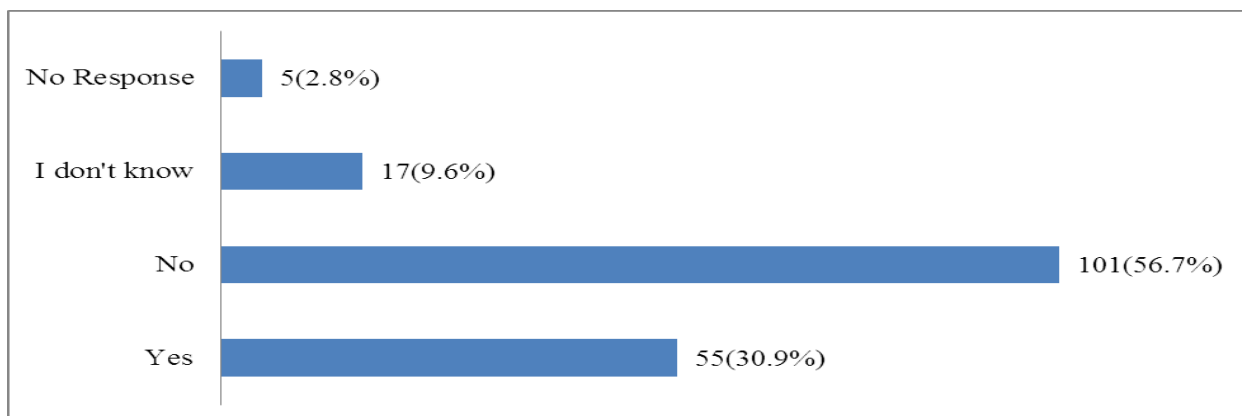


Figure 4.2 Cultural values which prohibits certain delivery modes (n=178)

4.3.3 Practice of FGM

Majority of the women, 148(83%) confirmed practice of FGM in their community as shown in Figure 4.3.

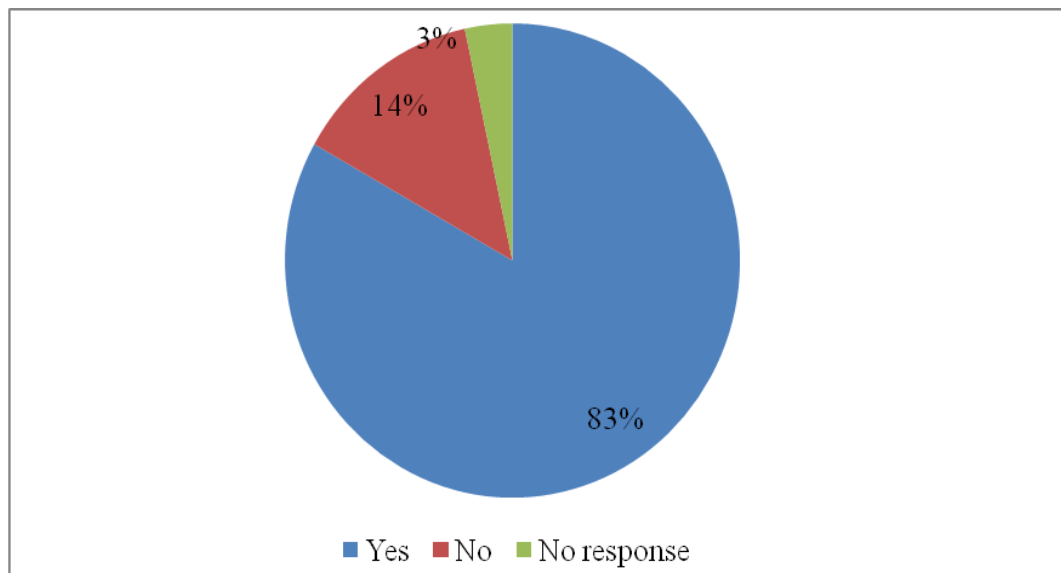


Figure 4.3 Practice of FGM (n=178)

4.3.4 Influence of cultural factors on mode of delivery

In this study, there was no association between ethnicity and mode of delivery ($p=0.318$). In all the tribes, majority of the women gave birth vaginally. Somali women comprised of majority, 76 (87.5%) of women who delivered through Vagina (Table 4.3).

Theme 9: Sensitivity to cultural beliefs and values impedes freedom on delivery choices. Results showed that Somali culture adore vaginal delivery as a sign of womanhood than other communities residing in the county.

“The Somali culture makes women difficult in terms of accepting CS delivery even when medical risks are clear. Some even decline to give consent” (Key Informant No.2)

Among women who said their cultural values prohibit certain delivery mode, a higher proportion of them had delivered through Caesarean Section, 32(56.1%), compared to those who had delivered through normal vaginal delivery, 25(43.9%) (Table 4.3). There was a

statistically significant association between availability of cultural sanctions and mode of delivery ($p = 0.001$).

Theme 10: CS is considered a taboo in some cultures. Findings showed the mode of delivery is a rite of passage through which women are expected to prove their femininity by having successful vaginal delivery.

“My husband would divorce me if I don’t delivery normally.” (FGD discussant no. 6).

Among respondents who reported their community to practice FGM, 100(69.9%), delivered through vagina compared to those who delivered through Caesarean Section, 43(30.1%). There was an association between FGM and delivery mode ($p = 0.001$) (Table 4.3).

Theme 11: FGM practices instill values which favour vaginal delivery. Results confirmed that the high prevalence of FGM practices within many communities especially Somali Women impedes acceptance of life saving obstetric practices perceived to be culturally unacceptable.

“Women who are circumcised are required to prove their womanhood and strength by giving birth normally with the help of a traditional birth attendant. For me I had no choice but to accept to deliver at home after which I was rushed to hospital when I developed problems” (FGD discussant no. 4).

Table 4.3 Influence of Cultural Factors on Mode of Delivery

Variable		Delivery Mode		Chi-square Statistics
		Normal Delivery	Vaginal Caesarian Section	
Ethnicity	Kamba	15(62.5%)	9(37.5%)	$\chi^2=17.547$, df=4, p=0.318
	Kikuyu	17(63.0%)	10(37.0%)	
	Meru	24(63.2%)	14(36.8%)	
	Somali	76(85.4%)	13(14.6%)	
Existence of prohibitive cultural values	Yes	25(43.9%)	32(56.1%)	$\chi^2=31.229$, df=2, p=0.001
	No	86(82.7%)	18(17.3%)	
	I don't know	6(37.5%)	10(62.5%)	
Practice of FGM	Yes	100(69.9%)	43(30.1%)	$\chi^2=14.139$, df=1, p=0.001
	No	12(60.0%)	8(40.0%)	

4.4. HOSPITAL RELATED FACTORS AND THEIR INFLUENCE ON MODE OF DELIVERY

4.4.1 Distance from Home to health Facility

Majority of the women 74(42%) who perceived the distance to be long was slightly higher than those who perceived the distance to be short (37%) as shown in Figure 4.4.

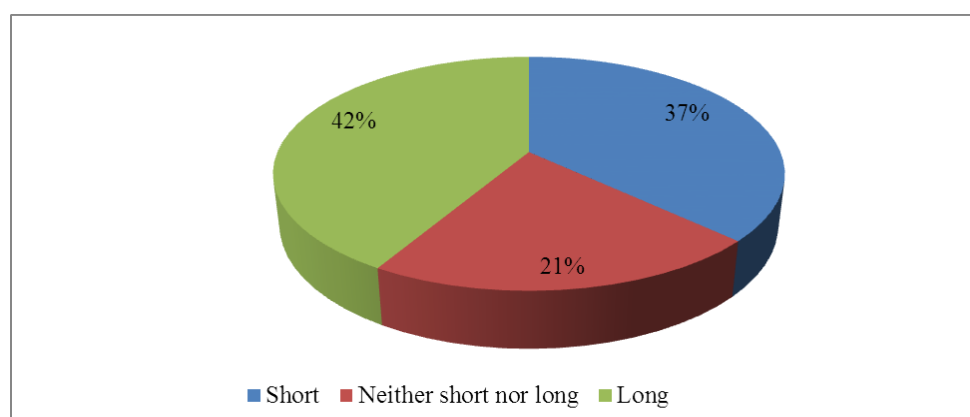


Figure 4.4 Distance from post-natal mother's home to the health facility (n=178)

4.4.2 Provider Friendliness

Majority of women, 125(70%) said that the health care providers were friendly (Figure 4.5).

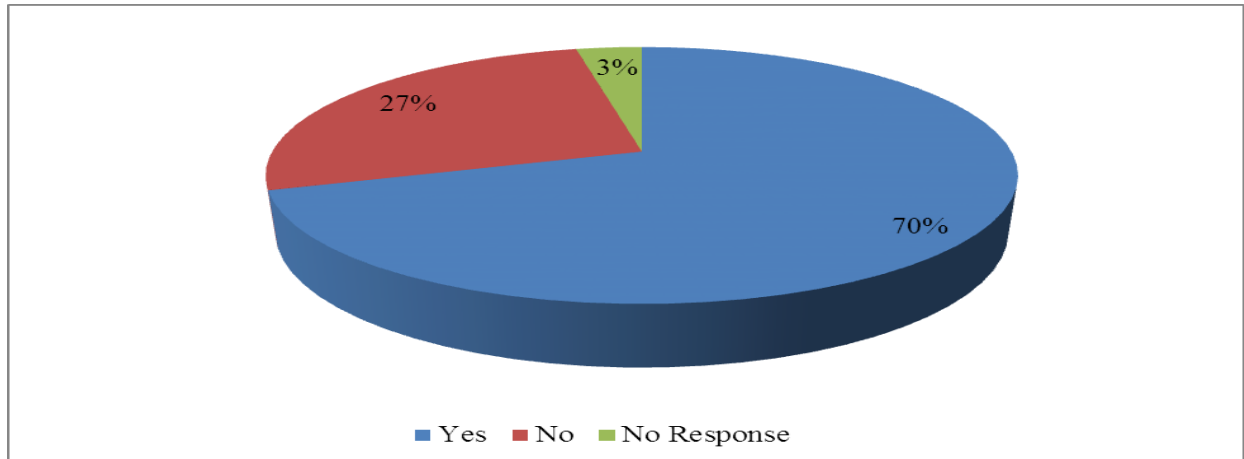


Figure 4.5 Friendliness of staff to post-natal mothers (n=178)

4.4.3 Perceived Service Quality

Majority of the women, 79(44%) rated quality of maternal care services to be good (Figure 4.6).

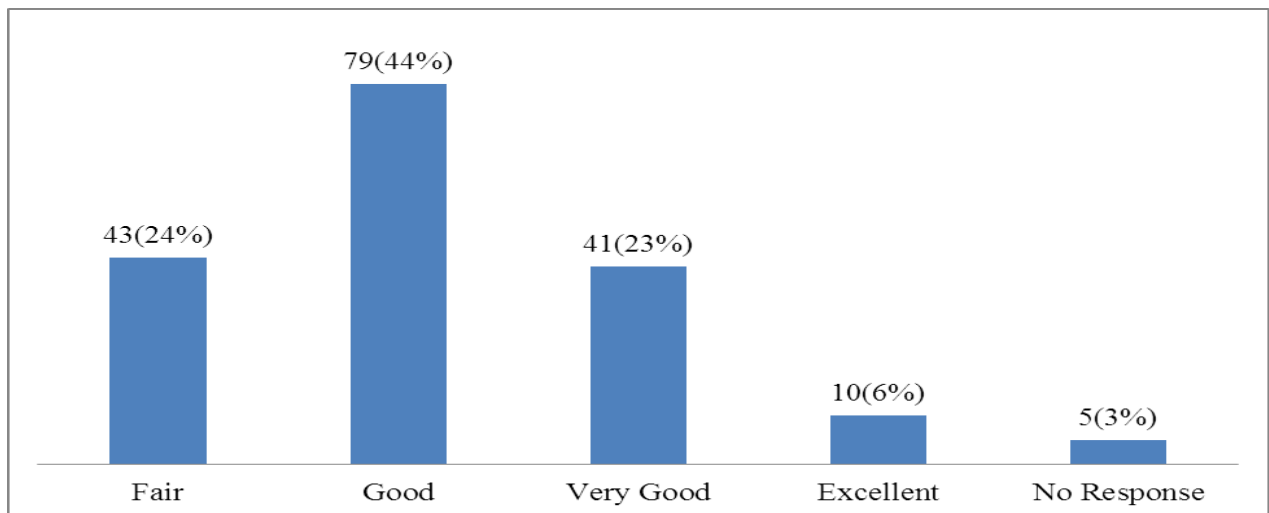


Figure 4.6 Perceived service quality of delivery services by post-natal mothers (n=178)

4.4.4 Influence of Hospital Related factors on mode of delivery

In regards to distance from home to health facility, there was almost equal distribution of women across the various distance categories for each of the delivery mode. There was no statistically significant association between distance from home to health facility and mode of delivery ($p = 0.474$). Majority of women 26(68.4%) who said that staff were friendly delivered normally. There was a statistically significant association between provider friendliness and mode of delivery ($p = 0.031$).

Theme 12: Provider-patient relationship builds trust and acceptance of medical advice on delivery options. Results showed that patient-provider mistrust was linked to high cases of rejection of medical advice and home deliveries.

“I accepted to deliver in this facility because the nurses were very good to me. They didn’t mistreat me”

In regards to quality of services, the proportion of women who delivered by normal vaginal delivery increased as perception for service quality improved from fair to excellent. There was a statistically significant association between perceived service quality and mode of delivery ($p = 0.008$) (Table 4.4).

Theme 13: Improved quality of delivery care inspires confidence on delivery services provided by a health facility. Findings showed that improvement in facility structures such as theatres has increased women trust in delivery services provided. However, service utilization remains sub-optimal.

“Women are now accepting to deliver in our facility after we improved our services. We have a new theatre which has better equipment which has encouraged women to use our delivery care” (Key informant no.3).

Table 4.4 Influence of Hospital-related Factors on Mode of Delivery

Variable		Delivery Mode		Chi-square Statistics
		Normal Vaginal Delivery	Caesarian Section	
Distance to hospital	Short	46(70.8%)	19(29.2%)	$\chi^2=1.552$, df=2, p=0.474
	Neither short nor long	26(68.4%)	12(31.6%)	
	Long	46(61.3%)	29(38.7%)	
Provider Friendliness	Yes	84(69.4%)	37(30.6%)	$\chi^2=3.981$ df=1, p=.031
	No	22(52.4%)	20(47.6%)	
Quality of delivery services	Fair	21(51.2%)	20(48.8%)	$\chi^2=6.867$, df=3, p= 0.008
	Good	48(64.9%)	26(35.1%)	
	Very Good	30(76.9%)	9(23.1%)	
	Excellent	8(80.0%)	2(20.0%)	

4.5 WOMEN KNOWLEDGE, ATTITUDE, PRACTICES ON MODE OF DELIVERY

4.5.1 Knowledge of Post-natal Mothers on Delivery Mode and Associated Risks

Majority of the women, 99(55.6%), were not advised on appropriate mode of delivery during pregnancy. The main source of advice on delivery mode for those who attended ANC were midwives while friends and relatives were the main source of advice for those who didn't attend ANC. Majority of women, 130 (73%) were aware of free maternity services. Majority of women, 164(92.1%) preferred vaginal delivery. Choice of mode of delivery was mainly based on past delivery experiences and advice from close family relatives (Table 4.5 below).

Theme 14: Lack of correct knowledge hinders women capacity to make informed decisions on delivery options. Results showed that illiteracy among women is a key cause of poor knowledge among women.

“Many women here are illiterate and poorly knowledgeable on delivery matters. They rely on their close relatives and friends who advise them wrongly.”

Theme 15: Lack of sufficient knowledge on serious delivery complications causes delays in giving informed consent for operations.

“There was a 15 year old mother who came here and she was advised on CS but she refused, she went home and tried to conduct the delivery at home but it failed. She came back here with a ruptured uterus and a dead baby in the uterus and that was when they consented, after wasting all this time.” (Key informant no. 2).

Table 4.5 Knowledge of post-natal mothers on delivery mode issues

Variable		Frequency	Percent (%)
During birth preparedness, were you advised on the safest mode of delivery?	Yes	51	28.7
	No	99	55.6
	I can't remember	28	15.7
Who gave you the advice	Midwives	51	28.7
	Family members and relatives	123	69.1
	No Response	4	2.2
Awareness of free maternal services	Yes	130	73.0
	No	37	20.8
	I can't tell	11	6.2
Preferred Mode of Delivery	Normal delivery	164	92.1
	Caesarian delivery	8	4.5
	No Response	6	4.5
Reasons for preferred mode of delivery	Nurses advice	22	13.6%
	previous experience	96	59.3%
	Advice from friends	13	8.0%
	Advice from family members	31	19.1%

Results showed majority of the women 155(87.1%) knew that babies born by CS are not more intelligent than VD. A substantial proportion of the women did not know that delivery by CS doesn't cause infertility, 98 (55.1%) and CS is not mandatory after one CS, 98(55.1%) (Table 4.6).

Theme 16: Women are not knowledgeable on associated delivery mode outcomes. This was cited to lead to decline of hospital related medical advice such as skilled birth attendance.

“I would not want to deliver by CS because I want to give birth to more children in future” (FGD discussant no. 8)

Table 4.6 Proportion of women with correct knowledge on delivery issues

Knowledge Aspect	Correct	In correct	Not Sure
Maternal mortality is more frequent in CS than VD	51(28.7%)	119(66.9%)	8(4.5%)
Babies born by CS are more intelligent than by VD	155(87.1%)	15(8.4%)	8(4.5%)
Delivery by CS makes one unable to give birth normally again (infertile)	72(40.4%)	98(55.1%)	8(4.5%)
CS is mandatory after one CS	68(38.2%)	98(55.1%)	12(6.7%)
The maximum number of CS one can have is four	93(52.2%)	69(38.8%)	16(9%)

4.5.2 Attitude of Post-natal Mothers towards Delivery Mode options

Majority of the women, 145(86%) perceived VD to be natural and the most preferred delivery mode. Most of the respondents, 119(72%) perceived CS to be a painful mode of delivery. Few women, 46 (27%) said they can make a decision for CS without involving their immediate family members. An equal proportion of women, 138 (82%), perceived doctors to be adequately skilled to perform CS and the hospital to be well equipped for CS (Table 4.7).

Theme 16: Women have wrong perceptions towards delivery mode and related outcomes. Wrong beliefs on delivery outcomes hinder their choice of delivery options even when medically indicated.

“Women believe that if a woman delivers through CS, she will not be able to do any other work for herself; house chores, she becomes like a useless person

since she can't do anything by or for herself. To prevent this, they tend to refuse CS in favor of VD” (Key informant no. 4)

Table 4.7 Attitude of post-natal mothers towards delivery mode options

Attitude	Agree	Disagree	Neutral
VD is the natural and the most acceptable mode of delivery	145(86%)	19(11%)	4(2%)
CS is a painful mode of delivery	119(72%)	33(20%)	13(8%)
Midwives respect mothers right for a mode of delivery	100(61%)	51(31%)	14(8%)
A mother will regain her health status sooner after vaginal delivery than caesarean delivery	149(90%)	14(8%)	3(2%)
I can decide on mode of delivery alone without my relatives involvement	46(27%)	122(73%)	0(0%)
I trust midwives/doctors’ advice on the mode of delivery	119(71%)	34(20%)	15(9%)
Doctors’ are adequately skilled to perform CS	138(82%)	12(7%)	18(11%)
The hospital is well equipped to perform any mode of delivery safely	137(82%)	22(13%)	9(5%)

4.5.3 Maternal practices and experiences related to delivery modes

4.5.3.1 ANC Attendance

Majority of the women, 121(68%) had attended ANC. Among those who had attended ANC(s), majority, 65(54%) had attended at least four visits. Majority of the women attending ANC, 74(61%) said that the ANC was not useful in determining their delivery mode (Table 4.8 below).

Theme 17: There is limited ANC counseling on pregnancy and related delivery options. Lack of proper ANC counseling reinforces negative myths and beliefs associated with specific mode of delivery.

“We were not advised on the best method of delivery during the antenatal attendance. Nurses really don’t talk about it so we don’t have good information to inform our delivery decisions. For instance, there is that fear in us because two weeks ago a relative of mine died after she was done CS”
(FGD Discussant no. 9)

Table 4.8 ANC Attendance and usefulness (n=178)

Variable		N	Percent
ANC Attendance	Yes	121	68%
	No	47	26%
	No Response	10	6%
Number of ANC Visits	1	7	6%
	2	9	7%
	3	40	33%
	4	65	54%
ANC Usefulness	Yes	43	36%
	No	74	61%
	I cannot tell	4	3%

4.5.3.2 Delivery Mode

Majority of the women, 114(64%) had delivered by normal vaginal delivery. Most women, 81(46%) had previously delivered at home. Majority of the women, 118 (66%) were satisfied with delivery mode. (Table 4.9 below).

Theme 18: Vaginal delivery is the prevalent mode. Many women preferred vaginal delivery because it was perceived to be the most culturally acceptable mode in the community.

“Vagina delivery is the most acceptable mode of delivery in this community.” **(Key informant no. 4)**

Table 4.9 Delivery Modes, previous delivery place and satisfaction with delivery mode (n=178)

Variable		N	Percent
Delivery Mode	Vaginal Delivery	121	68%
	Caesarian Section	57	32%
Acceptance to SC	Immediate	2	3.5%
	Late	55	96.5%
Previous Place of Delivery	This is my first delivery	32	17%
	Home	81	46%
	Hospital	65	37%
Satisfaction with Delivery Mode	Dissatisfied	60	34%
	Satisfied	118	66%

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Socio-Demographic

The study found that younger (< 19) and older women (> 40) have higher CS rates compared to the age group between 19 and 40. This finding is similar to a study done in Nigeria which showed higher rates of CS delivery among younger women (Envuladu *et al.*, 2013). The high prevalence of CS among younger women could be due to increasing delivery complications associated with tender age pregnancies and under-developed reproductive systems. However, among Somali Women, younger women decline CD even under medical indications associating it with risk of infertility and rejection by their spouse. The high rate of CS delivery among older women can be associated with general body weakness associated with multiple/many deliveries which can complicate the birth outcomes. This finding is contrary to a study done in Ethiopia by Regassa (2011) in which older women were reluctant to use caesarian section as a mode of delivery.

Marital status was significantly associated with delivery mode. In the current study, single and divorced women had higher rates of CS than married women. This is contrary to a study done in western Uganda by Asiimwe (2010) in which married mothers were found to have greater likelihood of delivering through CS due to greater access to financial support through their spouses. This finding was not unexpected as the decision making regarding mode of delivery among Muslim communities is done by the spousal or close family relative. For such communities, most husbands do not want CS deliveries as part of their cultural practices.

Concerning level of education, the study found that the rate of CS delivery was increased with increase level of education. This finding was also reported by Klemetti *et al.* (2012) who documented increase in CS acceptance among more educated mothers. This could be due to the fact that, educated mothers have the ability to easily access and use appropriate information to inform their delivery decisions. Education was found to be important in demystification of negative delivery- related beliefs. Women with higher education were found to have higher acceptance of CS especially where medical indications such as obstructed labour and fetal distress are indicated compared to their counterparts with lower

educational attainment. Many Somali women have no formal educations which remains a barrier in making informed decisions.

The study showed that VD delivery was common among women with higher parity while CS is common among primigravida. This result concurred with a study by Tsegay *et al.* (2013) in which parity was linked to higher likelihood for VD deliveries. Women with higher parity, especially those with successful VD deliveries, have greater confidence with home and VD deliveries than their counterparts. They have less fear of pain and risky pregnancy outcomes associated with CS. Muslims women have high parity rates which makes them prefer VD to CS.

The mode of delivery had no significant differences across the various income categories. This result contradicted findings by Dagne (2010) who found income levels to influence access to delivery options especially CS. This finding is also inconsistent with a world-wide study conducted in more than 50 countries which showed that more than 80% of caesarian deliveries were among rich women compared to only 34% in poor women (Victora *et al.*, 2011). The difference in this finding can be attributed to the availability of free delivery services in public hospitals like Wajir County. However, among these Muslim communities, it was evident that women are highly dependent on their spouses and close families which limit their discretion to delivery choices.

This result underpins the crucial role of reducing economic vulnerability through education opportunities and financial empowerment among women as a measure of improving delivery and general woman health outcomes which requires informed decision-making (Chanza *et al.*, 2012). This is of paramount importance among Muslim community in which a woman is considered a home-maker with limited opportunity for educational and financial empowerment due to strong patriarchal family and societal systems.

Mode of delivery didn't differ significantly with women occupation. This was explained by the finding that in many instances, household income is the main proxy indicator for wealth for a Muslim woman as opposed to personal income. Particularly, most Muslim women are housewives as encouraged by culture and greatly rely on spouse or family wealth. However, there is need for more evidence to support or refute this finding.

Delivery modes didn't differ significantly across religious affiliations of the women. This was contrary to past studies (Kamal, 2013; Abera and Belachew, 2011) which have

associated religion with delivery mode choice. This could be due to the disproportionate representation of respondents by religion in which majority (over 87%) were Muslims. However, the study revealed that religion plays significant indirect role on choice of delivery mode. Some Muslim women believed that spiritual (religious) interventions and traditional midwives attendance could avert complications associated with VD which led to increasing CS refusal rates. FGM practices were associated with perineal scars which resulted to delivery complications. This finding was highlighted by Abera and Belachew (2011) who reported FGM to increase likelihood of CS rates among women. These complications increase the risk of delivery by CS. These cultural values continue to pose significant challenges in choice of delivery.

The study indicated higher acceptance rate of CS among women enrolled in a social health group compared to those who didn't belong to any health group. This finding was similar to that of Ugwu and de Kok (2015) who indicated need for empowerment (socially, economically and educationally) of women as a strategy of tackling their vulnerability to poverty which is directly inter-twinned with poor health choices and outcomes among communities. Belonging to the social health groups was reported to provide an effective learning, sensitization and educative platform for empowering women on delivery-related issues such as demystifying use of CS on medical indications. The health social groups advocated for health practices and choices within the community such as benefit of ANCs, hospital delivery and anti-FGM practices which resulted to access to relevant information is key in making informed decisions on health issues. These groups have been successfully used to counter misconceptions, negative attitudes and promote health seeking behaviors

5.1.2 Cultural Factors

The study revealed no significant difference in delivery modes across ethnic groups of women. This is contrary to a past study by Spong *et al.* (2012) in which ethnicity was found to determine health seeking behaviors such as facility delivery. This could be explained by the sample size composition in which most of the women studied (51%) were from Somali origin while the rest were distributed among Kambas, Kikuyus and Merus. Despite this, it was clear from the study that Somali women perceived VD as the main culturally acceptable rite of passage. The finding was consistent with an Ethiopian study conducted by Regassa (2011) in

which women perceived VD as a sign of strength and femininity and hence encouraged by many cultural values including Muslim religions. Giving birth naturally is regarded as important for woman acceptance in the family and community hence limiting acceptance of CS.

The study found cultural values which advocate for VD as the normative delivery mode to negatively impact willingness of women to accept CS in case of medical indications. This finding was similar to that of a Kenyan study conducted by Mokuia (2014) in which some cultural values labeling women who are unable to give birth normally as ‘failed’ women, increasing CS refusal rate leading to high mortality and morbidity of mothers and their newborn. In such cultures, women struggle to maintain their societal and cultural status even at the expense of their lives. This is supported by Ochaku (2011) who agreed that beliefs and perceptions on women health choices is greatly pegged on prevailing social and culturally acceptable norms and values. However, there is increasing realization among women that these cultural beliefs and values are not furthering women agenda for healthier families and communities due to the risk involved. Women are actively advocating eradication of such beliefs which put their lives at risk which is bearing fruits gradually. Proper empowerment of women and community education is required to militate against delivery risks reinforced by these values.

The study showed that FGM practices increase likelihood of VD delivery and CS refusal rates due to its close link with cultural values and norms. This study was supported by past studies (Liu *et al.*, 2013; Abebe *et al.*, 2012) which found FGM values to promote culturally acceptable behaviors such as vaginal delivery. Where practiced, FGM is perceived as a rite of passage in which women are encouraged to prove their femininity through actions such as enduring pain and VD. This is against the revelation that FGM increases delivery complication associated with perineal scars. This practice is common among Somali cultures which explains persistent high rate of VD, mainly at home.

5.1.3 Hospital-related Factors

There was no significant difference between delivery mode and distance from home to health facility. This finding is contrary to a study done by Aberese-Ako *et al.* (2015) which reported that distance influences delivery options by enhancing availability and access to health services. The difference in findings can be explained by the observation that none of the

women studied perceived distance from their home to the facility to be long enough to limit their access to the facility. The study acknowledges lack of sufficient evidence to conclude on the relationship between distance to health facility and delivery mode choices hence need for further study.

The study found perceived quality of care to influence mode of delivery. The number of both VD and CS deliveries increased with perceived improvement in quality of delivery care. This finding was consistent with a study conducted by Kitui *et al.* (2013) in which quality of delivery services was reported to be a crucial predictor for choice of delivery mode by women. Women were of the view that the quality of delivery services has significantly and continues to improve in the hospital resulting to increasing skilled birth deliveries and CS acceptance. Improved perceived quality of care assures women that the facility has staff capacity and resources to conduct CS safely and successfully. According to Liu *et al.* (2013), mothers who are satisfied with quality of delivery services in a health facility are more likely to accept medical advice on delivery modes compared to their counterparts.

The study found staff friendliness to be an important construct of not only perceived service quality but also choice of delivery mode. The study found pregnant women to value good rapport between clients and service providers. This finding is similar to a study finding by Ochaku (2011) who found provider mistrust to discourage delivery in hospitals which leads to home delivery where the only option is VD. Where women perceived staff to have unsympathetic and poor attitude towards women's pain during labour leads to higher preferences for VD by traditional birth assistance which increases risks of complications and deaths. This finding was consistent with Mrisho *et al.* (2007) and Davidson *et al.* (2012) which showed that staff attitudes and poor treatment experiences in the health facilities and insensitivity to women suffering discouraged women from delivering in health facilities hence preferring vaginal delivery at home. Creating good provider-patient relationship was also found to lead to create good opportunities for effective women education and information sharing which leads to better delivery plans and informed delivery mode decisions.

5.1.4 Knowledge, Attitude and Practice Factors

The study found that the respondents had no adequate knowledge on delivery care, risk and related issues which undermines their ability to make informed and sound decisions. In the current study, women associated CS with potential for infertility and limited chances of giving birth normally during future deliveries. This study finding was similar to that of Fatemeh *et al.* (2014) in which women associated CS with risks of infertility. This explains increasing CS refusal rate even for life-saving CS interventions where risk of either baby or mother is indicated. This indicates lack of appropriate awareness and understanding among women resulting to beliefs and perceptions which limits discretions for CS where VD is risky or not medically suggestive.

Resultantly, a substantial proportion of women, 47(26%) don't attend ANC because they are ignorant of their importance in safe delivery. This is lower than the 43% of women who were reported not to attend ANC in KDHS, 2013-14. This difference in finding is mainly because this study was a hospital based study which meant that a significant proportion of women who delivered at home and have higher likelihood of not attending ANC were not included in the study. Additionally, many women who attend ANC don't receive sufficient advice and support from midwives due to limited patient-provider interaction time with the health staff. This finding was supported by a study by Ruckley *et al.* (2012) and Fatemeh *et al.* (2014) who found delivery methods to be based on past experiences rather than available medical information. This has resulted women overlying on friends and relatives for delivery-related information which affect quality of advice and information provided due to cultural inclination and quality of information source challenges.

The study found women to have negative attitude and practices which affect delivery choices. Inadequate knowledge has been linked to negative attitudes and poor practices towards choice of delivery methods especially use of CS. This finding was similar to that of Yazdizadeh *et al.* (2011) in which women attitude and practices were reported to influence individual beliefs and perceptions towards delivery options. Women education and awareness creation is useful in helping women embrace positive attitude towards delivery options.

The study found women perceived VD as the most natural, physiologic process and a sign of femininity. CS is the least used method. Use of CS was mainly associated with undeveloped

reproductive organs among young women and weak/old-age related complications among older women. This finding was consistent with that of Yuen *et al.* (2014) in which VD was perceived as the preferred natural delivery mode and a sign of womanhood. Some women view providers to violate mothers' right for choice of delivery such as use of sterilization during CS without consent and lack of involvement in decision-making process. This creates suspicion and mistrust on the intention of health providers especially in CS where one is anaesthetized hence limiting acceptance of CS hence need for improved patient-client relationship.

Due to increasing medical advancement, delivery by CS is becoming an acceptable and prevalent delivery mode especially among the educated, rich and younger women residing in urban areas which are highly influenced by westernization values. However, CS acceptance rates among Somali women remained low, including maternal requests which increases risks of maternal and child mortality. This was well documented by findings by Shiferaw *et al.* (2013) who found the rate of CS on mother's request in uncomplicated pregnancy to be very low in developing countries compared to higher utilization reported in developed countries. To improve this situation, there is need for improved ANC attendance, pregnant women counseling and community sensitization.

5.2 Conclusions

a) Socio-Demographic Factors

Results revealed that maternal age ($p = 0.001$), marital status ($p = 0.016$), level of education ($p = 0.007$), parity ($p=0.03$) are significantly associated with mode of delivery. Therefore, the null hypothesis that there is no relationship between socio-demographic factors and mode of delivery was rejected.

b) Cultural Factors

Results indicated that FGM practices ($p=0.001$) and belonging to the social health groups ($p=0.001$) are significantly associated with mode of delivery. Therefore, the null hypothesis that there is no relationship between cultural factors and mode of delivery was rejected.

c) Hospital Related Factors

Results showed that provider friendliness ($p=0.031$) and quality of delivery services ($p=0.0008$) are significantly associated with mode of delivery. Therefore, the null hypothesis that there is no relationship between hospital-related factors and mode of delivery was rejected.

d) Knowledge, Attitude and Practices

A substantial number of women lack correct knowledge on delivery options and risks to inform their decisions on delivery options. Women based their delivery decisions mainly on past experiences, advice from family and friends due to limited patient-provider interactions and attendance of ANCs. This has led to negative attitudes towards CS which has contributed to unfavorable practices like home delivery, non-attendance of ANC and refusal to give informed consent to CS if indicated medically.

5.3 Recommendations

5.3.1 Recommendation for Policy

1. The County government in collaboration with relevant stakeholders including community leadership should develop, implement and scale up (where already implemented) women and girls education empowerment initiatives and programmes aimed at improving women educational levels, preventing early or tender-age pregnancies and enhancing their access and use of relevant information on maternal and delivery services to support informed delivery decision
2. The County government in partnership with relevant partners should design and implement and or support formation of sustainable group-based social-economic empowerment programmes such as social-health groups incorporating aspects of maternal and related delivery health care empowerment initiatives to enhance women financial independence and their capacity to make independent delivery choices. In addition, the county government in partnership with relevant stakeholders such as Anti-FGM board, religious councils, community leadership should scale up and tailor awareness campaigns aimed at eradicating cultural and religious inter-twinned values, practices and FGM in the society against woman's sexual and reproductive health rights

3. The hospital management should promote provider friendliness through improved patient interactions and service quality reforms such as provision of well equipped theatre and related supplies to enhance demand and use of various delivery mode within the hospital.
4. The hospital management in partnership with the relevant stakeholders including the community should tailor and scale up women and community education and sensitization campaigns on facts and best practices related to choice of delivery modes to counter negative attitude, practices and improve transfer of correct knowledge on delivery options, risks and options to help women make informed decisions.

5.3.2 Recommendations for Further Study

Based on the study findings, the study makes the following recommendations for a community-based cohort longitudinal study among pregnant women to determine predictors of delivery modes and outcomes. This will help take into account women who deliver at home who were not captured in this study.

REFERENCES

1. Abebe, F., Berhane, Y. and Girma, B. (2012) Factors associated with home delivery in Bahirdar, Ethiopia: a case control study. *BMC research notes*. 5(1), 122-134.
2. Abera, M., Gmariam, A. and Belachew, T. (2011) Predictors of safe delivery service utilization in Arsi zone, south-east Ethiopia. *Ethiop Journal of Health Sciences*. 21, 101-113.
3. Aberese-Ako, M., Agyepong, I.A., Gerrits, T. and Van Dijk, H., (2015) 'I Used to Fight with Them but Now I Have Stopped!': Conflict and Doctor-Nurse-Anaesthetists' Motivation in Maternal and Neonatal Care Provision in a Specialist Referral Hospital. *PloS one*, 10(8), p.e0135129.
4. Arikan, D.C., Özer, A., Arikan, I., Coskun, A. and Kiran, H., (2011) Turkish obstetricians' personal preference for mode of delivery and attitude toward cesarean delivery on maternal request. *Archives of gynecology and obstetrics*, 284(3), 543-549.
5. Arthur, E., (2012) Wealth and antenatal care use: implications for maternal health care utilisation in Ghana. *Health economics review*. 2(1), 65-78.
6. Asimwe, K. (2010). Utilization of antenatal services among adolescents in western Uganda, 2007. Available from:[http://uaps2007.princeton.edu/download as px](http://uaps2007.princeton.edu/download_as_px) [Access date: 17th November, 2016].
7. Bryanton, J., Gagnon, A.J., Johnston, C. and Hatem, M., (2008) Predictors of women's perceptions of the childbirth experience. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. 37(1), 24-34.
8. Central Statistics Agency, ICF Macro). *Ethiopia Demographic and Health Survey, 2011-2012*. The DHS Program, ICF International Rockville, Maryland,USA. Available at: <https://dhsprogram.com/pubs/pdf/FR255/FR255.pdf> [Accessed on 15th January, 2017].
9. Chanza, D., Chirwa, E., Maluwa, A. and Masache, G. (2012) Factors affecting the choice for home deliveries in Malawi. *African Journal of Midwifery & Women's Health*. 6(3), 98-105.
10. Da Gama, S., Viellas, F., Schilithz, C., Filha, M., de Carvalho, L., Gomes, O., Costa, O. and do Carmo Leal, M. (2012) Factors associated with caesarean section among

- primiparous adolescents in Brazil. *Cad. Saúde Pública, Rio de Janeiro.* 30(3):1-11. Available at: http://www.scielo.br/pdf/csp/v30s1/en_0102-311X-csp-30-s1-0117.pdf [Accessed 7th March, 2017].
11. Dagne, E. (2010). *Role of socio-demographic factors on utilization of maternal health care services in Ethiopia.* Doctoral dissertation, Umeå International School of Public Health. Available at: http://www.phmed.umu.se/digitalAssets/50/50454_mph200920dagne-1-1-new-1-.pdf [Accessed 4th January, 2017].
 12. Dairo, M. and Owoyokun, K. (2010). Factors affecting the utilization of antenatal care services in Ibadan, Nigeria. *Benin Journal of Postgraduate Medicine.* 12(1), 132-152.
 13. Davidson, M., London, M. and Ladewig, P., (2012) *Olds' Maternal-Newborn Across the Lifespan.* NURSING & Women's Health.
 14. Dharmalingam, A., Navaneetham, K. and Krishnakumar, C.S., (2010) Nutritional status of mothers and low birth weight in India. *Maternal and child health journal.* 14(2), 290-298.
 15. Ecker J (2013) Elective cesarean delivery on maternal request. *JAMA.* 309(18). 1930-1936. PubMed PMID: 23652524.
 16. Envuladu, A., Agbo, A., Lassa, S., Kigbu, H. and Zoakah, A., (2013) Factors determining the choice of a place of delivery among pregnant women in Russia village of Jos North, Nigeria: achieving the MDGs 4 and 5. *International Journal of Medicine and Biomedical Research.* 2(1), 23-27.
 17. Etghayi M, Nouhi E, Khaje pour M (2010) Investigating attitude of labor pain and choosing the type of Delivery in pregnant women refering to health centers in Kerman. *J Qual Res Health Sci.* 10(1):36-41
 18. Fatemeh G., Azadeh A., Eznollah A., Farideh S., Mina M., Shahrzad Z., Farah F. and Fakhr-al-molouk Y. (2014). Women's knowledge and attitude towards mode of delivery and frequency of cesarean section on mother's request in six public and private hospitals in Tehran, Iran. *J. Obstet. Gynaecol. Res.* 17(5), 43-57.

19. García-Armesto, S., Angulo-Pueyo, E., Martínez-Lizaga, N., Mateus, C., Joaquim, I. and Bernal-Delgado, E., (2015) Potential of geographical variation analysis for realigning providers to value-based care. ECHO case study on lower-value indications of C-section in five European countries. *The European Journal of Public Health*. 25(1), 44-51.
20. Geidam, A., Audu, B., Kawuwa, M. and Obed, J. (2009) Rising trend and indications of caesarean section at the university of Maiduguri teaching hospital, Nigeria. *Annals of African Medicine*. 8(2). 122-139.
21. Hajian, S., Shariati, M., Najmabadi, K.M., Yunesian, M. and Ajami, M.I., (2015). Use of the extended parallel process model (EPPM) to predict Iranian women's intention for vaginal delivery. *Journal of Transcultural Nursing*. 26(3), 234-243.
22. Ijadunola, K., Ijadunola, Y., Esimai, A. and Abiona, C. (2010). New paradigm old thinking: the case for emergency obstetric care in the prevention of maternal mortality in Nigeria. *BMC women's health*. 10(1), 44-64.
23. Kamal, S. (2013) Preference for institutional delivery and caesarean sections in Bangladesh. *Journal of Health, Population and Nutrition*. 31(1), 96-107.
24. Kenya National Bureau of Statistics (KNBS, ICF Macro). *Kenya Demographic and Health Survey, 2013-2014*. The DHS Program, ICF International Rockville, Maryland, USA. Available at: http://apps.who.int/medicine_docs/documents/s17116e/s17116e.pdf [Accessed 18th February, 2017].
25. Khorsandi, M., Ghofranipour, F., Hidarnia, A., Faghihzadeh, S. and Ghobadzadeh, M. (2012) The effect of PRECEDE PROCEED model combined with the health belief model and the theory of self-efficacy to increase normal delivery among nulliparous women. *Procedia-Social and Behavioral Sciences*. 46 (9), 187-194.
26. Kitui, J., Lewis, S. and Davey, G. (2013) Factors influencing place of delivery for women in Kenya: an analysis of the Kenya demographic and health survey, 2008/2009. *BMC Pregnancy and Childbirth*. 13(1), 1-18.
27. Klemetti, R., Che, X., Gao, Y., Raven, J., Wu, Z., Tang, S. and Hemminki, E. (2010) Cesarean section delivery among primiparous women in rural China: an emerging epidemic. *American journal of obstetrics and gynecology*, 202(1), 65-e1.

28. Lassi, Z., Mansoor, T., Salam, A., Das, K. and Bhutta, Z., (2014). Essential pre-pregnancy and pregnancy interventions for improved maternal, newborn and child health. *Reproductive health*. 11(1), 1-17.
29. Lavender, T., Hofmeyr, G., Neilson, P., Kingdon, C. and Gyte, G. (2012) *Caesarean section for non-medical reasons at term*. The Cochrane Library.
30. Leap, N., Dodwell, N.C.T. and Newburn, M., (2010) Working with pain in labour. *Res. Dig.: Natl. Childbirth Trust*. 49(12), 22-26.
31. Lee, S., Khang, Y. and Lee, S. (2004) Women's attitudes toward mode of delivery in South Korea—a society with high cesarean section rates. *Birth*. 31(2), 108-116.
32. Liu, N.H., Mazzoni, A., Zamberlin, N., Colomar, M., Chang, O.H., Arnaud, L., Althabe, F. and Belizán, J.M., (2013). Preferences for mode of delivery in nulliparous Argentinean women: a qualitative study. *Reproductive health*. 10(1). 1-12.
33. Lumbiganon, P., Laopaiboon, M., Gulmezoglu, A., Souza, J.P., Taneepanichskul, S., Ruyan, P., Attygalle, E., Shrestha, N., Mori, R., Nguyen, D. (2010) Method of delivery and pregnancy outcomes in Asia: The WHO global survey on maternal and perinatal health 2007-2008. *Lancet*. 375, 490-499.
34. MacMillan, D. (2010) Understanding the health beliefs of first time mothers who request an elective cesarean versus mothers who request a vaginal delivery. Available at: http://scholarworks.gsu.edu/cgi/viewcontent.cgi?article=1017&context=nursing_diss [Accessed 12th March, 2017]
35. Maharlouei, N., Rezaianzadeh, A., Hesami, E., Moradi, F., Mazloomi, E., Joulaei, H., Khodayari, M. and Lankarani, K. (2013) The preference of Iranian women to have normal vaginal or cesarean deliveries. *Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences*. 18(11), 943-961.
36. Mahoney, A., (2010) Religion in families, 1999–2009: A relational spirituality framework. *Journal of Marriage and Family*. 72(4), 805-827.
37. Menacker, F., Hamilton, B., Howell, S., Johnston, T. and Macleod, S. (2010) *Recent Trends in Cesarean Delivery in the United States*. NCHS Data Brief, No. 35, 1-8.

38. Mokuia, J. (2014) Factors Influencing Delivery Practices among Pregnant Women in Kenya: A Case of Wareng' District in UasinGishu County, Kenya. *International Journal of Innovation and Scientific Research*. 10(1), 50-58.
39. Mrisho, M., Schellenberg, J., Mushi, A., Obrist, B., Mshinda, H., Tanner, M. and Schellenberg, D. (2007) Factors affecting home delivery in rural Tanzania. *Tropical Medicine & International Health*. 12(7), 862-872.
40. Ochako, R., Fotso, J.C., Ikamari, L. and Khasakhala, A., (2011) Utilization of maternal health services among young women in Kenya: insights from the Kenya Demographic and Health Survey, 2003. *BMC pregnancy and childbirth*. 11(1),1-15.
41. O'Neill, S., Khashan, A., Kenny, L., Kearney, P., Mortensen, P., Greene, R., Agerbo, E., Ulbjerg, N. and Henriksen, T. (2015) Time to subsequent live birth according to mode of delivery in the first birth. *BJOG: An International Journal of Obstetrics & Gynaecology*. 122(9), 1207-1215.
42. Ota E., Ganchimeg T., Morisaki N., Vogel JP, Pileggi C., Ortiz-Panozo E. (2014) Risk Factors and Adverse Perinatal Outcomes among Term and Preterm Infants Born Small-for-Gestational-Age: Secondary Analyses of the WHO Multi-Country Survey on Maternal and Newborn Health. *PLoS ONE*, 9(8): e105155.
43. Panti, A., Karima, A., Nwobodo, I., Yakubu, A., Airede, L. and Egondy, S. (2012) Caesarean morbidity and mortality in a tertiary health institution in Sokoto, North-West Nigeria. *Orient Journal of Medicine*. 24(1-2), 7-12
44. Rahmati-Najarkolaei, F., Eshraghi, T., Dopeykar, N. and Mehdizadeh, P., (2014). Influencing Factors to Delivery Selection in Pregnant Women; A Case study in Tehran. *Journal of Health Policy and Sustainable Health*. 1(3), 34-43.
45. Regassa, N., (2011) Antenatal and postnatal care service utilization in southern Ethiopia: a population-based study. *African health sciences*, 11(3): 87-98.
46. Rosenstock, Irwin (1974) "Historical Origins of the Health Belief Model". *Health Education & Behavior*. 2(4), 328-335.
47. Ruckley, C., Fowkes, G. and Bradbury, W. (2012) *Venous Disease: Epidemiology, management and delivery of care*. Springer Science & Business Media.

48. Sakala, M., (2011) *Assessment of the barriers to the utilization of antenatal care services in Kazungula district. Zambia* (Doctoral dissertation). Available at: http://etd.uwc.ac.za/xmlui/bitstream/handle/11394/3606/Sakala_MPH_%202011.pdf?sequence=1 [Accessed 11th March, 2017]
49. Shah, A., Fawole, B., M'Imunya, J., Amokrane, F., Nafiou, I., Wolomby, J., Mugerwa, K., Neves, I., Nguti, R., Kublickas, M. (2009) Cesarean delivery out- comes from the WHO global survey on maternal and perinatal health in Africa. *International Journal of Gy-naecology & Obstetrics*.107,191-197.
50. Shiferaw, S., Spigt, M., Godefrooij, M., Melkamu, Y. and Tekie, M., (2013) Why do women prefer home births in Ethiopia?. *BMC pregnancy and childbirth*. 13(1), 1-11.
51. SID (Society for International Development) (2016). Report on Poverty lines in Kenya. Available at: <http://inequalities.sidint.net/kenya/national/poverty/2/> [Accessed on 22nd February, 2017].
52. Spong, C., Berghella, V., Wenstrom, K., Mercer, B. and Saade, G. (2012) Preventing the first cesarean delivery: summary of a joint Eunice Kennedy Shriver national institute of child health and human development, society for maternal-fetal medicine, and American college of obstetricians and gynecologists workshop. *Obstetrics and gynecology*. 120(5), 1181-1193.
53. Teixeira, N. and Pereira, W. (2006). Partohospitalar: experiências de mulheres da periferia de Cuibá-MT. *Revista Brasileira de Enfermagem*. 59(6), 740-744.
54. *The Constitution of Kenya [Kenya]*, 27 August 2010, available at: <http://www.refworld.org/docid/4c8508822.html> [Accessed 13 March 2017]
55. Tian, X., Wu, J., Li, B., Qin, M. and Qi, J., (2014) Occurrence of cesarean section and related factors in 40 counties of China from 1978 to 2010. *Zhonghuayu fang yixuezazhi [Chinese journal of preventive medicine]*. 48(5), 391-395.
56. Tran, T., Nguyen, C., Nguyen, D., Eriksson, B., Bondjers, G., Gottvall, K., Ascher, H. and Petzold, M., (2011) Urban-rural disparities in antenatal care utilization: a study of two cohorts of pregnant women in Vietnam. *BMC health services research*. 11(1), 1-15.

57. Tsegay, Y., Gebrehiwot, T., Goicolea, I., Edin, K., Lemma, H. and San Sebastian, M. (2013) Determinants of antenatal and delivery care utilization in Tigray region, Ethiopia: a cross-sectional study. *International journal for equity in health*. 12(1), 1-19.
58. Ugwu, N.U. and de Kok, B. (2015) Socio-cultural factors, gender roles and religious ideologies contributing to Caesarian-section refusal in Nigeria. *Reproductive health*, 12(1), 1-15.
59. Vallières, F., Hansen, A., McAuliffe, E., Cassidy, E.L., Owora, P., Kappler, S. and Gathuru, E. (2013) Head of household education level as a factor influencing whether delivery takes place in the presence of a skilled birth attendant in Busia, Uganda: a cross-sectional household study. *BMC pregnancy and childbirth*. 13(1), 1-24.
60. Victora, C., Aquino, M., do Carmo Leal, M., Monteiro, C., Barros, F. and Szwarcwald, C. (2011) Maternal and child health in Brazil: progress and challenges. *The Lancet*, 377(9780), 1863-1876.
61. Wajir County Referral and Teaching hospital statistics, 2015. *Unpublished data*.
62. Wajir County Referral and Teaching hospital statistics, 2016. *Unpublished data*.
63. Wanjira, C., Mwangi, M., Mathenge, E. and Mbugua, G. (2011) Delivery practices and associated factors among mothers seeking child welfare services in selected health facilities in Nyandarua South District, Kenya. *BMC public health*. 11(1), 1-21.
64. WHO (2010) *Count-down to 2015 decade report (2000-2010): Taking stock of maternal, newborn and child survival*. World Health Organization: Unicef
65. WHO (2013) *Trends in caesarean delivery by country and wealth quintile: cross-sectional surveys in southern Asia and sub-Saharan Africa*. World Health Organization. Available at: <http://www.who.int/bulletin/volumes/91/12/BLT-13-117598-table-T2.html>
66. Yazdizadeh B, Nedjat S, Mohammad K, Rashidian A, Changizi N, Majdzadeh R. (2011). Cesarean section rate in Iran, multidimensional approaches for behavioral change of providers: A qualitative study. *BMC Health Serv Res*. 11,159-171.
67. Yuen, J., Painter, I., Abraham, L., Melian, M. and Denno, D.M., (2014). A comparison of trends in cesarean delivery in Paraguay between 1995 and 2008. *International Journal of Gynecology & Obstetrics*. 126(3), 265-271

APPENDICES

Appendix I: Time Frame

ACTIVITY/ PERIOD	2016		2017					
	Sep- Oct	Nov- Dec	Jan- Mar	Apr	May	Jun	Jul	Aug
Problem Identification								
Proposal writing								
Seeking consent from ethical committee								
Pretesting of study tools								
Data collection								
Data cleaning and entry								
Data analysis								
Report writing and presentation								
Dissemination of study findings								

Appendix II: Study Budget

Item	Quantity	Unit	Unit Cost (Ksh)	Total Amount(Ksh)
Human Resource				
Training of research assistants	2	3	500	3,000
Research assistance	3	1	1000	3,000
Research Assistants Stipends	2	40	500	40,000
Transport (Air Ticket)	1	1	25000	25,000
Sub total				71,000
Materials and Resources				
Biro pens (2 dozen)	2	1	180	360
Pencils (2 dozen)	2	1	60	120
Rubbers (6)	6	1	10	60
Folders (3)	3	1	100	300
Field books	65	1	50	3,250
Flash disks	2	1	1000	2,000
Sub-total				6,090
Proposal and Thesis				
Proposal printing (80pages)	3	80	10	2,400
Proposal Photocopying (80 Pages)	6	80	5	2,400
Proposal paper binding (80 pages)	9	80	100	72,000
Ethics committee fee	1	1	2000	2,000
Data analysis	1	1	40000	40,000
Final Thesis Printing (150 pages)	3	150	10	4,500
Final Thesis Binding (150 pages)	6	1	500	3,000
Sub-Total				123,300
Grand Total				200,390

Appendix III: Participant Information Sheet and Information Sheet Consent Form

Investigator: Habiba Ali Maalim Tel.: 0725611412

School of Nursing Sciences,

University of Nairobi

P.O. Box 19676, Nairobi.

Introduction: I am a student at the School of Nursing Sciences, University of Nairobi pursuing a Master of Science Degree in Nursing. I am conducting a study titled:

Determinants of mode of delivery choices among mothers admitted in post natal ward.

The purpose of this information is to give you details pertaining to the study that will enable you make an informed decision regarding participation. You are free to ask questions to clarify any of the aspects we will discuss in this information and consent form. I will also ask you questions regarding the study before you sign the consent form to ascertain your comprehension of the information provided.

Background and objective: The purpose of this study is to evaluate the determinants of mode of delivery choices among delivered mothers, admitted in postnatal ward in Wajir county referral hospital. Pregnant mothers tend to have preferences for certain mode of delivery. The findings from this study could be used to educate mothers to adopt the correct mode of delivery.

Participation: Participation in the study will entail answering questions which will be filled by the interviewer in the semi-structured questionnaire. You will not be subjected to any invasive procedure.

Benefits: There is no direct monetary benefit in participating in this study. However, the results of the study will be useful in facilitating the understanding of the right mode of delivery when indicated for.

Risks: There are no economic or physical risks to participating in the study. However, you will take some time off your schedule to respond to questions from the researcher administered questionnaire. Also during the interview, some questions will require you to disclose some personal information that might trigger some negative feelings and possibly anxiety. If this happens, the researcher will refer you to the hospital counselor. The researcher will also endeavour to spend approximately 10- 20 minutes with you for the purpose of data collection.

Confidentiality: Confidentiality will be maintained and the information you provide will only be used for the intended purpose of the study. In addition, your name will not be required on any forms or used during publication of the final report thus ensuring your anonymity. All materials used during the study will be under lock and key and only the personnel involved in this study will have access to them. Electronic files will be saved on password and fire-wall protected computers.

Voluntary participation: Participation in this study is voluntary. Refusal to take part will not attract any penalty. You retain the right to withdraw from the study without any consequences. You are free not to answer any question during the interview.

Compensation: There is no compensation for participating in the study.

Conflict of interest: The researcher and the supervisors confirm that there is no conflict of interest amongst them.

Appendix IVa: Consent Form (English Version)

If you Consent to Participate in the study please sign below:

I hereby consent to participate in this study. I have been informed of the nature of the study being undertaken and potential risks explained to me. I also understand that my participation in the study is voluntary and the decision to participate or not to participate will not affect my employment status at this facility in any way whatsoever. I may also choose to discontinue my involvement in the study at any stage without any explanation or consequences. I have also been reassured that my personal details and the information I will relay will be kept confidential. I confirm that all my concerns about my participation in the study have been adequately addressed by the investigator and the investigator have asked me questions to ascertain my comprehension of the information provided.

Participants Signature (or thumbprint).....Date.....

I confirm that I have clearly explained to the participant the nature of the study and the contents of this consent form in detail and the participant has decided to participate voluntarily without any coercion or undue pressure.

Investigator Signature.....Date.....

For any Clarification, please contact any of the following persons:

1. Habiba Ali Maalim

Researcher

Mobile Number: 0725611412

Email: maalimhabib@yahoo.com

2. The Chairman,

University of Nairobi- Kenyatta National Hospital

Ethics and Research Committee

P.O Box 19676-00202

Tel: (254-020)-2726300 Ext 44355

Email: uonknh_erc@uonbi.ac.k

Appendix IVb: Fomu ya Kutoa Idhini Kushiriki

Kama wewe umekubali Kushiriki katika utafiti huu, tafadhali tia sahihi chini:

Mimi nimekubali kushiriki katika utafiti huu, nimefahamishwa asili ya utafiti unaofanywa na uwezekano wa hatari iliyopo. Mimi pia nimeelewa kwamba ushiriki wangu katika utafiti huu ni wa hiari na uamuzi wa kushiriki au kutoshiriki hautaathiri hali yangu ya ajira katika kituo hiki kwa njia yoyote ile. Mimi pia ninaweza kuchagua kuacha kushiriki kwenye utafitihuu katika hatua yoyote bila maelezo yoyote au madhara. Mimi pia nimeakikishiwa kuwa maelezo yangu binafsi na taarifa nitakazotoa zitakuwa siri. Mimi ninathibitisha kwamba wasiwasi wangu wote kuhusu ushiriki wangu katika utafiti umekuwa wa kutosha kushughulikiwa na uchunguzi na mpelelezi ataniuliza maswali ili kuhakikisha ufahamu wangu wa taarifa zinazotolewa.

Mshiriki Sahihi Tarehe

Mimi ninathibitisha kwamba nimeelezwa kwa mshiriki asili ya utafiti na yaliyomo kwenye fomu hii ya idhini kwa kina na mshiriki imeamua kushiriki kwa kujituma bila kutumia nguvu yoyote au shinikizo lolote.

Mpelelezi Sahihi Tarehe.

Kwa Ufafanuzi wowote, tafadhali wasiliana na:

1. Habiba Ali Maalim

Mtafiti

Simu Idadi: 0725611412

Barua Pepe: maalimhabib@yahoo.com

2. Mwenyekiti,

Chuo Kikuu cha Nairobi- Kenyatta National Hospital Maadili na Kamati ya Utafiti

P. O BOX 191676 Kanuni 00202

Tel: (254-020) -2726300 Ext 44355

Barua Pepe: uonknh_erc@uonbi.ac.ke

Appendix V: Study Questionnaire

Questionnaire on “Determinant of choice of delivery mode among delivered mothers admitted in postnatal ward in Wajir county referral hospital”

Serial number.....Date of interview.....

Instructions: Thank you for your willingness to respond to the following questions and participate in the study. The session will take 20 – 30 minutes. You will be interviewed by a research assistant who will fill the questionnaire for you. Your responses will be recorded just the way you put them. You are encouraged to be as accurate in your responses as possible. All gathered information will be kept confidential and will only be used for the purposes of this study. There is no right or wrong response. Feel free to ask for any clarification in the questions that I will ask you. Thank you.

SECTION 1: SOCIO-DEMOGRAPHIC DATA

1. What is your age (in years)? _____ Years
2. What is your marital status?
[1] Married [2] Single [3] separated [4] Widowed [5] Divorced
3. What is your occupation? [1] Self-employed [2] Formal employment [3] House wife [4] Others (specify).....
4. How many children do you have:_____
5. What is your highest level of education?
[1] Have no formal education
[2] Primary level [3] Secondary level [4] College [5] University level
6. What is your religion?
[1] Muslims [2] Christian [3] Protestant [4] Hindu [5] Traditional African
[6] Others (specify).....
7. How much is your average monthly earnings in Ksh? (State)
8. Do you belong to any social group? [1] Yes [2] No (If No, Skip to **section 11**)
9. If yes in question 4 above, which one? (Specify).....
10. How has the social group influenced your decisions on mode of delivery? (Specify)

SECTIONII: CULTURAL FACTORS

1. What is your ethnicity? (State).....
2. Do you have cultural beliefs that prohibit certain mode of delivery?
[1] Yes [2] No [3] I don't know
3. If yes, in which way? (Specify)
4. Does you culture practice Female Genital Mutilation?
[1] Yes [2] No [3] I don't know
5. What other traditional practices in your community prohibit certain mode of delivery (please explain):
 1. _____
 2. _____
 3. _____

SECTION IV: HOSPITAL RELATED FACTORS

1. What is the distance from your home to this hospital?
[1] Short [2] Neither Short nor Long [3] Long [4] I cannot tell
2. Were the health care providers friendly to you? [1] Yes [2] No
3. How do you rate the quality of maternity services in this hospital?
[1] Poor [2] Fair [3] Good [4] Very good [5] Excellent

SECTION V: KNOWLEDGE

1. During birth preparedness were you advised on the safest mode of delivery?
[1] Yes [2] No [3] I don't know
2. If Yes in question 1 above, what advise were you given?
(Specify).....
3. Who gave you the advice stated in question 2 above? (Indicate if more than 1)

[1] Doctors [2] Midwives [3] Family members (relative) [4] Friends

[5] Traditional birth attendants [6] Traditional medicine men

[7] Others (specify).....

4. Were you aware of free maternity services in this hospital before coming for delivery?

[1] Yes [2] No [3] I don't know

5. Which was your preferred mode of delivery before giving birth?

[1] Normal delivery [2] Caesarian section [3] I don't know

[4] Others (specify).....

6. What are the reasons for the preferred mode of delivery stated in question 5 above?

[1] Doctors advice [2] Nurses Advice [3] Previous experience

[4] Advice from friends [5] Advice from family members

[6] Others (Specify).....

7. Please indicate the best response to the statement below .

No.	Statement	Yes	No
1.	Maternal mortality is more frequent in CS than VD		
2.	Babies born by CS are more intelligent than by VD		
3.	Delivery by CS makes one unable to give birth again		
4.	CS is mandatory after one CS		
5.	The maximum number of CS one can have is four		

SECTION VI: ATTITUDE

1. Indicate the level of agreement concerning the mode of choice of delivery

Statement	Strongly disagree	Slightly disagree	Neither Disagree nor Agree	Slightly agree	Strongly agree
VD is the natural and the most acceptable mode of delivery					
CS is a painful mode of delivery					
Midwives respect mothers right for a mode of delivery					
A mother will regain her health status sooner after vaginal delivery than caesarean delivery					
I can't decide on mode of delivery alone without consulting my close family relatives					
I trust midwives/doctors' advice on the mode of delivery					
Doctors' are adequately skilled to perform CS					
The hospital is well equipped to perform any mode of delivery safely					

Section VII: Practices

- Did you attend any antenatal visit? [1]Yes [2] No
- If Yes, in question 2 above, how many antenatal visit did you attend?
[1] One [2] Two [3] Three [4] Four
- Did you find the antenatal visit useful in determining your delivery mode?
[1] Yes [2] No [2] I do not know
- Which method have you delivered with (current)?
[1] Normal Vaginal delivery [2] Caesarian section
- If you deliver via CS, did you accept it immediately? [1] Yes [2] No
- How satisfied are you with the method you have delivered with?

[1] Highly Dissatisfied [2] Slightly Dissatisfied [3] Neither Satisfied nor
Dissatisfied [4] Slightly Satisfied [4] Highly satisfied

[5] Extremely satisfied

7. What was your previous place(s) of delivery? (You can indicate more than 1 if applicable)

[1] This is my first delivery [1] Home [2] Hospital [3] On the way [4] Others

(Specify).....

Appendix VI: Key Informant Interviews guide

Dear participant,

You are hereby invited to participate in a Key Informant Interview for a study on ‘Determinant of mode of delivery among delivering mothers admitted in postnatal ward in Wajir referral hospital’. You have been chosen purposively due to the expected level of information and knowledge you have on the study topic. The details of the research are as per the information sheet for participants. Requirements for informed consent are as specified in the informed consent form which you will be expected to fill for proof of consent to participate. Be honest, free and active in your participation in responding to the questions given for due response. Participation will be guided by use of Key Informant Interviews Guide. There will be an observer, moderator and note taker for your Key Informant Interview information. Recordings will also be made by use of tape recorders to store information as presented. All information gathered will be held under strict confidentiality and will be used only for purposes of the research.

1. From your own experience, what are the mothers’ socio-demographic characteristics that determine mode of delivery choices among delivering mothers? Probe for age, level of education, marital status, parity, income level, religion and belonging to a health social group)
2. In your own view, what are the cultural factors that influence mode of delivery choices among delivering mothers? Probe for FGM, cultural beliefs, taboos and practices, social networks)
3. What are the hospital related factors that influence mode of delivery choices among delivering mothers in maternity? Probe for distance, supplies, equipment, personnel, lab, quality, theatre)
4. What is the knowledge and attitude of mothers towards various mode of delivery? In what ways does the knowledge and attitude affect choice of delivery mode for the mothers? (Prove for preferences for mode of delivery, knowledge, attitude and practices)
5. From experience, what is the preferred mode of delivery among mothers?

Appendix VII: Focused Group Discussion Guide

Dear participant, many wordings

You are hereby invited to participate in a focused Group Discussion for a study on ‘Determinant of mode of delivery among mothers admitted in postnatal ward in Wajir referral hospital’. You will be one of the members of a focused discussion group made up of 8 to 10 participants. The details of the research are as per the information sheet for participant. Requirements for informed consent are as specified in the informed consent form which you will be expected to fill for proof of consent to participate. Be honest, free and active in your participation in responding to the questions given for due response. Participation will be guided by use of Focused Group Discussion Guide. There will be an observer, moderator and note taker for your focused group discussion. Recordings will also be made by use of tape recorders to store information as presented. All information gathered will be held under strict confidentiality and will be used only for purposes of the research.

1. In what ways does your socio-demographic characteristic (age, level of education, marital status, parity, income, occupation, religion and belonging to a socio-health group) influenced your choice of mode of delivery?
2. What are the socio-cultural factors that influenced your choice of mode of delivery?
Probe for FGM, cultural beliefs, taboos and practices, social networks)
3. In what ways do the hospital related factors influence your mode of delivery choices?
Probe for distance, supplies, equipment, personnel, lab, quality, theatre)
4. What is your preferred mode of delivery? Why do you prefer this delivery mode?
Probe for knowledge, attitudes and practices

Thank you very much for your participation.

Appendix VIII: Ethical Review Approval



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel: (254-020) 2726300 Ext 44355

Ref: KNH-ERC/A/129

Habiba Ali Maalim
Reg.No.H56/81658/2015
School of Nursing Sciences
College of Health Sciences
University of Nairobi

Dear Habiba

REVISED RESEARCH PROPOSAL- DETERMINANTS OF MODE OF DELIVERY AMONG POSTNATAL MOTHERS ADMITTED IN WAJIR COUNTY REFERRAL HOSPITAL (P979/12/2016)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above revised proposal. The approval period is from 20th April 2017 – 19th April 2018.

This approval is subject to compliance with the following requirements:

- a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH-UoN ERC before implementation.
- c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- f) Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- g) Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>



KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

20th April 2017

“Protect to Discover”

Appendix IX: Letter of Authorization from Wajir Referral Hospital

COUNTY GOVERNMENT OF WAJIR

**DEPARTMENT OF MEDICAL SERVICES, PUBLIC HEALTH AND
SANITATION**

When replying, please
Quote our Ref & Date



P O Box 2 – 70200
WAJIR

WCG/DOH/DMS/ VOL 8(03)




Date: 28th April 2017

**TO: The CEO WCRH
Attn: Hospital Administrator**

Re: Approval to Carry Out Study in Wajir County Referral Hospital

The bearer, Mrs. Habiba Ali Maalim is a student under taking MSc in Nursing- Midwifery/ obstetric at Nairobi University. She is planning to carry out a scientific study on determinants of mode of delivery among postnatal mothers admitted in Wajir county referral hospital as a case study. The results generated will be of great public health significance for it will guide our department as far as maternal and neonatal health is concerned. The study had being approved and granted the necessary permission. Please allow Mrs. Habiba Ali Maalim to undertake the study in your facility and accord her all the necessary support during her period of data collection especially in accessing postnatal ward.

Yours Faithfully


**Noor Mohamed Sheikh
County Chief Officer
Medical Services**

cc:

- CCO PH &S
- Director & Deputy Directors of health

Appendix X: Map showing location of Wajir County Referral Hospital

