UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

DETERMINANTS OF SKILLED BIRTH ATTENDANCE IN THE MAMPRUGU MOAGDURI DISTRICT, NORTHERN REGION

BY

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DECLARATION

Student

I hereby declare that this thesis is the results of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

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ABSTRACT

The fifth Millennium Development Goal calls for a reduction of maternal mortality ratio by 75% between 1990 and 2015. A key indicator to measure this goal is the proportion of births attended by skilled health personnel. The maternal mortality ratio of Ghana in the year 2013 was 154 deaths per 100,000 live births. High skilled birth attendance is correlated with lower maternal mortality rates globally. However, the proportion of births with a skilled attendant was only 54.7% in Ghana in the year 2013. Therefore identifying the determinants of skilled attendance for delivery is a priority area to give policy recommendations.

The study design was a cross sectional descriptive study. Probability and non-probability sampling techniques were employed in the sampling procedures. At the household level data was collected from women of reproductive age between 15-49 years, to find out some of the barriers to the effective utilization of the modern health care services, with emphasis on skill birth delivery. A total of 220 women of reproductive age were part of the study and four focused group discussions were conducted among opinion leaders in four communities. The quantitative data was analyzed using SPSS 18.0 while the qualitative data was analyzed using quotes and simple narrations.

Only 29.5% of births were attended by skilled attendants in the district. Women who were aware of danger signs during pregnancy had a 3.1 odds of using skilled birth attendant (AOR=3.075, 95% CI [1.082, 8.743]). Some specific danger signs during pregnancy with significant odds on the use skilled birth attendant included; baby not moving for more than one day after the 20th week of the pregnancy (AOR=0.408, 95% CI [0.175, 0.956]).

Women who took HIV test during antenatal care were more likely to seek skilled attendant at birth, χ^2 =9.1, p=0.011. Women who had a discussion about birth preparedness plans were significantly likely to deliver with skilled attendant, χ^2 =8.5, p=0.014. However, weighing, checking the blood pressure, asking about their medical history, receiving folic acid, taking blood sample did not produce any significance. Site and the person who can handle the placenta before it is buried had statistically significant influence on place of delivery (χ^2=38.3, p=0.000 and χ^2=36.0, p=0.000). Also the person deemed traditionally qualified to bury the placenta yielded significant difference on place of delivery (χ^2=28.6, p=0.000).

Various factors accounted for the low skilled birth coverage of 29.5% in the district, which is far below both regional and national coverage of 46.8% and 54.7% respectively. Inadequate birth preparedness among women of reproductive age led to the low skilled birth coverage in the district. Women who took decisions for themselves as to where to deliver largely favored health facility delivery. Among women who accessed antenatal care services and took HIV test, most of these women delivered at the health facility. Also women whose abdomens were examined during antenatal care services had a higher likelihood of giving birth at the health facility. Women who were aware of danger signs during pregnancy had a higher likelihood of delivering at the health facility. Traditional rites performed on pregnant women were one major factor that delays the start of antenatal visits

DEDICATION

This work is dedicated to my humble parents Mr/Mrs. Mumuni from whom I take a lot of inspiration. To my little baby Nasara Mishel, and my only *"prof"* Borenyi Marshal for their prayers and unflinching support even in difficult times.

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LIST OF ABBREVIATIONS

ANC	Ante Natal Care
AOR	Adjusted Odds Ratio
BP/CR	Birth Preparedness and Complications readiness
BPP	Birth Preparedness Plan
CHPS	Community based Health Planning and Services
CI	Confidence Interval
FGD	Focused Group Discussion
GHS	Ghana Health Service
HIV	Human Immune Virus
ICD	International Classification of Diseases
IE&C	Information, Education and Communication
IPT	Intermittent Preventive Treatment
Km	Kilometer
Max	Maximum
MDG	Millennium Development Goal
Mg	Milligram
MICS	Multiple Indicator Cluster Survey
Min	Minimum
Ml	milliliter
MM	Maternal Mortality
MmHg	millimeters of Mercury
MoH	Ministry of Health

MTCT	Mother to Child Transmission
NHIS	National Health Insurance Scheme
NHRC	Navrongo Health Research Center
NICE	National Institute for Clinical Excellence
NTDs	Neglected Tropical Diseases
OPD	Outpatient Department
OR	Odds Ratio
PMTCT	Prevention of Mother To Child Transmission
PPH	Post Partum Hemorrhage
p-value	Probability value
R/DHMT	Regional/District Health Management Team
RCH	Reproductive and Child Health
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
STIs	Sexually Transmitted Infections
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UK	United Kingdom
UNFPA	United Nations Population Fund
UNDP	United Nations Development Programme
WHO	World Health Organization
WORA	Women of Reproductive Age

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study

Globally, one of the major public health problems challenging the medical community in the developing world is maternal mortality (Saksena, 2010). This is underlined by the continuing occurrence of more than half a million deaths of women yearly due to pregnancy–related complications in the world, majority of which occurs in developing countries (Saksena, 2010). Maternal mortality (MM) appears to be particularly common in sub-Sahara Africa and South Asia (Saksena, 2010).

According to Saksena (2010), most obstetric complications occur around the time of delivery and cannot be predicted. Therefore it is important that all pregnant women have access to a skilled birth attendant, i.e. someone with some level of midwifery skills, who is able to manage a normal delivery and who can recognize and manage obstetric complications, or refer timely if needed. Skilled attendants largely operate at the health facility level, however with the low OPD per capita (0.19) of the usage of health facilities in the district many women at the point of birth may not have access to skilled attendants at the point of birth.

The World Health Organization advocates that the "single most important factor in preventing maternal deaths" and the "proportion of births attended by skilled health personnel" is one of the indicators for Millennium Development Goal 5. Access to skilled delivery care is also crucial to prevent stillbirths and to improve newborn survival. Skilled attendance at childbirth is crucial for decreasing maternal and neonatal mortality, yet many women in low- and middle-income countries deliver outside of health facilities without skilled help (Gabrysch et al., 2009).

The phenomenon of low patronage of maternal and child health services (of which facility delivery is a part) can better be addressed if efforts are made to find out realistic barriers, since the implementation of any intervention to solve a population based problem should be designed with the end users/beneficiaries in mind. Hence the essence of this study to unearth some of the barriers to this phenomenon since it may help programme designers to design interventions that can respond to the needs of people as far as skill delivery is concerned.

According to a Lancet series on maternal survival published by Rosmans et al. (2006) most maternal deaths seem to occur between the third trimester and the first week after the end of pregnancy. Mortality can be extremely high on the first and second days after birth. Therefore to assess the determinants of low skill delivery in the district to understand the dynamics is timely to enhance strategic programming.

According to Adegoke et al. (2012) Sub-Saharan Africa (SSA) contributes to 57% of the 358, 000 global maternal deaths. The life time risk of dying during pregnancy, childbirth or in the early post natal period is very high in this setting; 1 in 31 compared to 1 in 4300 in developed regions. These findings provide strong support for prioritization of strategies that focus on professional intrapartum care. It is therefore not acceptable to be aware of these daring consequences of not accessing skilled attendant care at the point of birth and not making attempt to unearth the barriers, thus the essence of this study to unearth the barriers to the effective utilization of modern health care services of which skilled delivery is a part.

According to Akazili et al. (2011), in Africa 63% of pregnant women make at least one antenatal care visit while 42% deliver with a skilled attendant. Lack of physical access to health care facilities presents a fundamental hurdle to receiving care, even in urban settings. A review of

literature reveals that in rural Tanzania, 84 percent of women who gave birth at home intended to deliver at a health facility but did not due to distance and lack of transportation (Magoma et al., 2010).

Amankwa (2008) is of the view that at current pace, Ghana may not be able to achieve the MDGs in relation to child and maternal health by the year 2015 if there is no urgent redrafting of the operational framework with the view to re-position maternal and child health promotion issues.

According to the standard treatment guidelines of the Ministry of Health, Ghana, sixth edition (2010), antenatal care (ANC) refers to the comprehensive care given to a pregnant woman to ensure that she goes through pregnancy, labor, and the puerperium safely with the delivery of a healthy baby. To this end, a good history has to be taken and physical examination done at each antenatal visit to identify problems that are likely to have an adverse effect on the pregnancy. It is equally important to keep accurate records of all findings related to the pregnancy and as well treat any identified problem.

Per the standard treatment guidelines (MOH/GHS, 2013), all high risk pregnancies (pregnancies that are likely to have one or more risk factors) have to be identified and referred to a hospital or an obstetrician for management. Health education involving healthy behaviors, diet, exercise, danger signs in pregnancy, emergency preparedness, and preparation for safe delivery is important for all mothers (MOH/GHS, 2013).

An important component of the efforts to reduce the health risks of mothers and infants is to increase the proportion of babies delivered under skilled birth attendants. This is necessary because skilled attendance (proper medical attention and hygienic conditions during labor and

delivery) can reduce the risk of complications and infections that can cause the death or serious illness of the mother and/or baby (Amankwa, 2008). According to Pandey (2012) accessibility is one of the principles of "Health for ALL" stated in Alma Ata declaration on primary health care but still, due to lack of universal access, equality in health status cannot be assured. Moreover, because there are other important social determinants of health and its distribution, even with the increasing catchment of tertiary health care facilities, utilization of primary health care is low due to costs, attitude of health provider as well as location of facilities, etc. hence making pregnancy safer has become central to population policies.

While many strategies have attempted to address some of the economic, social, and physical factors as well as barriers that contribute to poor maternal health outcomes, women's utilization of maternal health services is often influenced by perceived socio-cultural, economic, and health system factors operating at the community, household, and individual level as well as within the larger social and political environments and health care infrastructure (Pandey, 2012).

The situation in Ghana is similar to those experienced in other parts of the less developed world. Although antenatal visits have increased over the years, deliveries at health facilities have not increased substantially (Akazili et al., 2011).

Findings from the 2002 panel survey, a longitudinal survey carried out by the Navrongo Health Research Centre (NHRC), revealed that over 80% of mothers attended antenatal clinic during their last pregnancy but less than 30% of them delivered at health facilities. This is also true for the 2000 panel survey data suggesting that the trend is the same and there is minimal change between the survey years (NHRC, 2000). This marked imbalance between antenatal attendance

and corresponding deliveries at health facilities has aroused international concern since it has implications for maternal and child health.

Fees reduce women's use of maternal health services and keep millions of women from having hospital-based deliveries or from seeking care even when complications arise (Amankwa, 2008). Mikkonen et al. (2002) in their studies revealed that even when formal fees are low or nonexistent, there were informal fees or other costs that pose significant barriers to women's use of services. These may include costs of transportation, food, or lodging place for the family member(s) who help to care for the woman in labor at the hospital,

1.2 Problem Statement and Justification

According to (WHO, 2013), the level of assistance a pregnant woman receives preceding and during childbirth has important health consequences for both mother and baby. Home deliveries are often carried out with untrained attendants, whereas births delivered at a health facility are more likely to be delivered by a skilled health care worker who is equipped adequately or to some extent with midwifery skills.

While many strategies have attempted to address some of the economic, social, and physical factors and barriers contributing to poor maternal health outcomes, women's utilization of maternal health services is often influenced by perceived socio-cultural, economic, and health system factors operating at the community, household, and individual level as well as within the larger socio-political environments and health care infrastructure (Pandey, 2012). These include inequitable distribution of facilities and/or infrastructure for primary healthcare and maternal healthcare services, inadequate referral services, inadequate human resource etc.

According to the Ghana Health Service (GHS, 2010) annual report, skilled delivery improved nationally from 45.6% in the year 2009 to 49.5% in the year 2010. However, there are inter-regional variations. The Northern Region though recorded an increase, the increase was very marginal. In the year 2009, skill delivery in Northern region was 36.1% as compared to 36.8% in the year 2010, a percentage point increase of just 0.70.

The Mamprugu Moagduri District may not be an exception to low proportions of births attended by skilled attendants. According to the District Health Directorate (DHD, 2013) annual report, 16.6% of deliveries were attended to by skilled attendants in the district. Hence the need to study the determining factors to accessing skill delivery in the district. It still remains a district with challenging terrain that affects the delivery of health services especially during the raining season where the White Volta river over flow its banks and makes the district extremely "*hard to reach"*. Therefore the objective of this study is to unearth the differentials as far as the determinants of low skill delivery are concerned. The WHO (2007) revealed that the measure of quality is a complicated index, however this study attempted to measure quality from the communities' perspective.

1.3 Research questions

I. What demographic factors influence skilled birth attendance in the district?

II. To what extend do antenatal care services influence skilled birth attendance?

III. What information, education & communication package influence skilled birth attendance?

IV. What socio-cultural factors or beliefs that influence skill birth attendance in the district?

1.4.0 Main objective

The main objective of this study is to assess the determinants of skilled birth attendance among women in the Mamprugu Moagduri district.

1.4.1 Specific objectives

The specific objectives of the study are:

1. To explore the demographic factors that influence skilled birth attendance in the district
2. To determine the influence of antenatal care services on skilled birth attendance
3. To explore what information, education & communication package influence skilled birth attendance
4. To assess the socio-cultural factors or beliefs that influence skill birth attendance in the district

1.5 Relevance of the study

The concept of knowing what works in terms of reducing maternal mortality is complicated by a huge diversity of country specific contexts (for that matter district specific contexts) and of determinants of maternal health. The implementation of an effective intrapartum-care strategy

should be an overwhelming priority. Such a strategy must be based on local specific context and local determinants of maternal health. This study therefore seeks to unearth the local specific contexts and determinants of low skill birth attendants (key component of maternal health) in the Mamprugu Moagduri district that may help programme designers to design interventions that are responsive to the needs of people as far as skill delivery is concerned.

1.6 Scope of the study

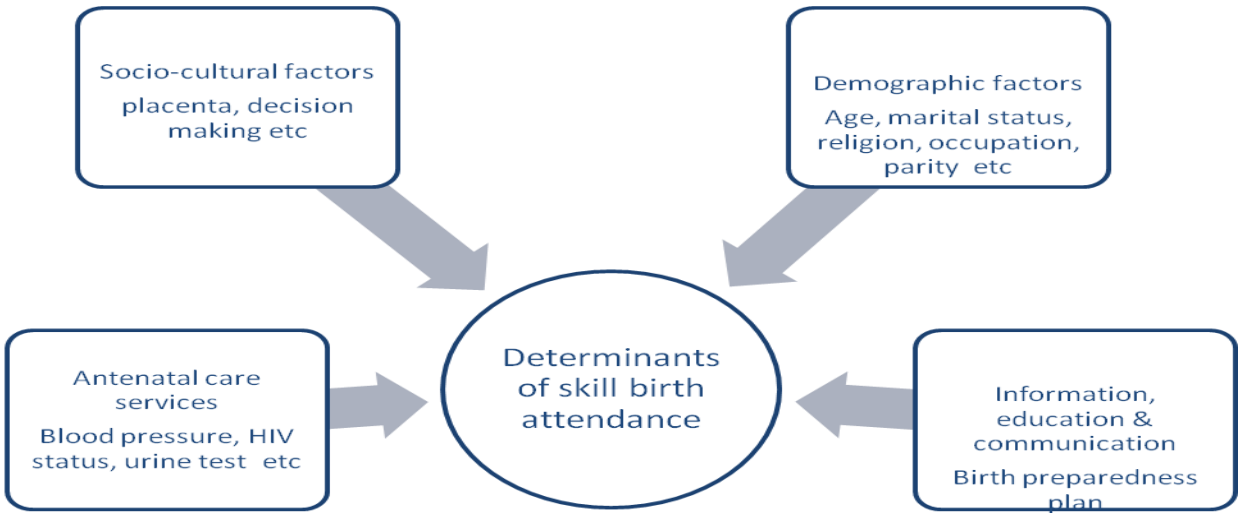
Mothers (aged 15 to 49 years) with babies less than twelve months prior to the study were studied mainly using structured questionnaires. A cross section of opinion leaders were also interacted with using a focused group discussion guide. The study was carried out in order to assess the determinants of skilled birth attendance in Mamprugu Moagduri District of Northern Region. A conceptual framework that was used for the study was adapted from (WHO, 2007) and formulated from the following factors: quality of services, demographic factors, socio-cultural/belief factors, and IE&C. The study was conducted in the year 2014.

1.7 Conceptual framework

The use of the common phrase “We know what works” is a deceptively simple phrase often used in advocacy campaigns to reduce the burden of maternal mortality in developing countries. Though improving coverage of skilled birth attendance may largely depend on effectively implementing what works best, however in many cases further research is needed to unravel and understand the local specific contexts at the community level to determine the barriers to low

skill birth. The principal factors that interplay to generate health outcomes and needs be to understood at the community level are demographic, socio-cultural, and the health system. Thus the study focuses on these thematic areas in its conceptualization as a guide to direct the research.

Figure 1. Conceptual Framework



Source; Adapted from (WHO, 2007)

According to the conceptual framework adapted from (WHO, 2007) a lot of factors (i.e. not limited to the above alone) influence the proportion of women who deliver at the health facility level. Educational status which is a demographic feature was found in several literature reviews (Pandey, 2012; Amankwa, 2008) to affect the general health status of women of which seeking for health facility level delivery is a part.

In the same vein, the behaviors of people are to a large extent rooted in the socio-cultural beliefs of the people. Akazili et al. (2011) in their study reveal that though physical access to health infrastructure may influence patronage, but also argued that decisions as to when and where to seek for health care and for that matter health facility based delivery are influenced by different levels of consultations.

The measure of quality issues is one of the most complex indicators in addressing most health related indices, (WHO, 2007). According to the WHO in service delivery at every point or level of the service, critical look should be given to how best to achieve better results at that point. Hence issues of how well informed clients are, transportation arrangement, types of personnel rendering the service etc are all linked and contribute to quality.

This study will concentrate on these four thematic areas as stated in the conceptual framework to assess the factors that contribute to the low facility level delivery in the Mamprugu Moagduri District of the Northern Region, hence the study variables explored included;

Socio cultural factors and beliefs: this study looked at socio cultural factors which affect the health seeking behavior of individuals with emphasis on skill birth delivery. This is related to individual (woman) and family's socio cultural status. Socio cultural beliefs and previous experiences with quality of care are factors that were surveyed in the study.

Demographic factors; These include the educational background, age, occupation, parity and marital status of women.

Antenatal care services; these include the services received during pregnancy and at the point of birth, the cadre of staff that provide these services

Information, Education and Communication (I, E&C); awareness level among women of reproductive age on birth preparedness plans

1.8 Definition of terms

Skilled Attendant: A skilled attendant is defined as "an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained proficiently in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborn" (WHO, 2007). Skilled attendants include midwives, doctors, and nurses with midwifery and life-saving skills.

Skilled attendance: The process by which a pregnant woman is provided with adequate care during labor, birth, and the postpartum and immediate newborn periods. In order for this process to take place, the attendant must have the necessary skills and must be supported by an enabling environment at the domiciliary, primary (health centre), or first referral (hospital) levels which includes adequate supplies, equipment, and infrastructure, as well as an efficient and effective system of communication and referral/transport.

Traditional birth attendants (TBA): The term TBA refers to traditional, independent (of the health system), non-formally trained and community-based providers of care during pregnancy, childbirth and the postnatal period (WHO, 2004).

Maternal death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or

aggravated by the pregnancy or its management, but not from accidental or incidental causes (ICD-10).

Maternal mortality ratio: Number of maternal deaths during given time period per 100 000 live births during same time period

Maternal mortality rate: Number of maternal deaths in given time period per 100 000 women of reproductive age, or woman-years of risk exposure, in same time period.

Lifetime risk of maternal death: Probability of maternal death during a woman's reproductive life, usually expressed in terms of odds

Proportionate mortality ratio: Maternal deaths as proportion of all female deaths of those of reproductive age—usually defined as 15–49 years—in a given time period.

The hypertensive disorders of pregnancy comprise a spectrum of conditions that is usually classified into four categories (NICE, 2010):

(1) *Gestational hypertension*: a rise in blood pressure during the second half of pregnancy, or new hypertension presenting after 20 weeks without significant proteinuria in a pregnant woman;

(2) *Pre-eclampsia*: usually hypertension with proteinuria (protein in urine) during the second half of pregnancy (i.e. after 20 weeks);

(3) *Chronic hypertension*: a rise in blood pressure before pregnancy or before 20 weeks' gestation or if the woman is already taking antihypertensive medication when referred to maternity services; and

(4) *Severe pre-eclampsia* is pre-eclampsia with severe hypertension and/or with symptoms, and/or biochemical and/or haematological impairment *Proteinuria* is defined as the presence of 300 mg or more of protein per liter in a clean-catch, midstream specimen of urine, or urinary protein:creatinine ratio is greater than 30 mg/mmol or a validated 24-hour urine collection result shows greater than 300 mg protein.

Classification of hypertension (NICE, 2010)

Mild hypertension: diastolic blood pressure 90–99 mmHg, systolic blood pressure 140–149 mmHg.

Moderate hypertension: diastolic blood pressure 100–109 mmHg, systolic blood pressure 150–159 mmHg.

Severe hypertension: diastolic blood pressure 110 mmHg or greater, systolic blood pressure 160 mmHg or greater.

Post Partum Hemorrhage (PPH): is generally defined as blood loss greater than or equal to 500 ml within 24 hours after birth, while severe PPH is blood loss greater than or equal to 1000 ml within 24 hours. PPH is the most common cause of maternal death worldwide. Most cases of morbidity and mortality due to PPH occur in the first 24 hours following delivery and these are regarded as primary PPH whereas any abnormal or excessive bleeding from the birth canal occurring between 24 hours and 12 weeks postnatally is regarded as secondary PPH.

Antenatal care (ANC:) Refers to the comprehensive care given to a pregnant woman to ensure that she goes through pregnancy, labor, and the puerperium safely with the delivery of a healthy baby. WHO recommends that all women give birth with a skilled attendant who can provide safe

care during normal labor and childbirth, and manage or refer complications for both the woman and newborn.

1.9 Structure of this thesis

Chapter one addressed the background to the study which talked about trends in maternal mortality and the causes of these deaths is in the world, Africa and Ghana. In this same chapter, problem statement, research questions, study objectives, conceptual framework, and scope of the study were also addressed accordingly.

In chapter two, the researcher reviewed relevant literature in relation to research work and more so, in support of the purpose of the study. The literature review was organized and presented according to the specific objectives.

Chapter three discussed the study methods and design, data collection techniques and tools, study population, study variables, sampling techniques and size, data handling and analysis, and ethical consideration.

The results and interpretations of the study had been presented in the chapter four, also according to the specific objectives.

Chapter five and six dealt with the discussion of the findings and conclusions and recommendations respectively. The references and appendices followed these chapters.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1. Introduction

Relevant literature was reviewed and studied on the research topic in order to know what information is already available. The review was focused to enhance conceptualization. Most of this information was taken from journals by downloading it from the internet using Google and PubMed as the search engines. The regional health directorate, Northern Region of the Ghana health Services was contacted to get relevant data on the subject matter. The World Health Organization's website was thoroughly utilized to access information on training guidelines on maternal, neonatal and new born care.

The message ‘ensuring a skilled professional at delivery for all’ is core to reducing maternal morbidity and mortality (WHO, 2013). Nevertheless, the route to achieving this ought to embrace the complex range of issues that impact on health provider education, health system organization and functioning, human resource management as well as the social, cultural, political and economic environments that impact on women’s access to health care. Therefore there is the need to understand the factors that encourage childbirth in a health facility which is attended to by a trained health professional.

2.2.0 Determinants of skilled birth attendants

2.2.1Quality of care and skilled birth attendance

After the launching of the Safe Motherhood Initiative in Nairobi, Kenya in 1987—the Inter-Agency Group for Safe Motherhood established an action agendum in 1997 for reducing maternal mortality. The agendum concluded that "the single most critical intervention for safe motherhood is to ensure that a health worker with midwifery skills is present at every birth" (WHO, 2010).

The proportion of deliveries attended to by skilled health personnel has been identified as one of the main tools that reduce the incidence and prevalence of maternal/neonatal mortality and morbidity greatly. Also, it is one vital indicator which is being used for measuring progress towards MDG 5 (WHO, 2004). According to Amankwa (2008) in Tanzania, more than 90% of all pregnant women attend antenatal care at least once and approximately 62% make four times or more visits, yet less than five in ten receive skilled delivery care at available health units.

In a similar study in Kenya, Carter (2010) found that the concept of antenatal care as a preventative step during pregnancy, institutional delivery is thought to be a service only utilized when complications arise. When women of reproductive age were asked about the motivations behind birth location, 58.5% of them noted their decision of where to give birth to be dictated by the existence or lack of "problems" before or during delivery (Carter, 2010). Homebirth was overwhelmingly the preferred option when difficulties did not occur to impede a safe delivery.

Whether to invest in the training of TBAs to assist in home deliveries and what should be the nature and content of the training program have been highly controversial in most countries (Amankwa, 2008).

Training programs for TBAs have not been standardized. At times, programs have included elaborate training on providing care in the antenatal period, at delivery, and in the postnatal period. At other times, they covered only cursory inputs at birth and in the early postnatal period, such as recognition of danger signs in the mother or baby and promotion of appropriate care seeking (Narayanan et al., 2004).

On the supply side of health provision, Health care providers spoke about this mentality in the Kenyan study with great disdain. They linked the resistance to seek prevention through skilled attendance with another phenomenon, scarcity in "birth preparedness". Planning in advance for delivery was revealed to be an unfamiliar concept to most and even a cultural taboo in some settings (Carter, 2010). Lack of preparation for birth was also linked to the belief that "birth is a spontaneous process". When pregnant women were asked where they planned to deliver many answered that it depended on the circumstances because one could never be sure when or where labor would begin (Carter, 2010).

The "Proportion of births attended to by skilled health personnel" represents the percentage of all the process by which pregnant women and their infants are provided with adequate care during pregnancy, labor, birth and the postpartum and immediate newborn periods, whether the place of delivery is at home, health center or hospital provided the attendant has the necessary and needed skills and backed by an enabling environment at various levels of the health system, including a supportive policy and regulatory framework; adequate supplies, equipment and infrastructure; and an efficient and effective system of communication and referral or transport (WHO, 2010).

It is therefore consistent with findings from Esena et al. (2013) that health systems factors, service delivery and the inter-personal aspects of care also play an important part in the

utilization of skilled attendance. Esena et al. (2013) are of the view that there are problems with referrals between community, health centers and district hospitals which make it difficult for women in emergency situations to get appropriate care. Delays at health facility (said to be the third delay) occurs between the time of arrival of the client at the health facility and the facility's response in providing the needed care. At the health center, response to basic obstetric emergencies is generally inadequate in terms of skilled attendants, equipment, logistics, and drugs, and staff.

According to the Multiple Indicator Cluster Survey conducted (MICS, 2011) for Ghana, skill delivery is still a challenge. The Northern Region remains the only region with coverage below 50% over the past five years. In the year 2008, the skill delivery coverage was 27% and in the year 2011 the coverage increased to 37%, thus calling for the need for more to be done in the form of research into the barriers to the phenomenon.

The World Health Organization opines that any country where the proportion of births attended to by skilled attendants is more than 80%, maternal mortality is less than 100 (WHO, 2014). The World Health Organization (WHO, 2014) points to the development of professional midwifery (during the 20th century) as the cause for the dramatic declines in maternal deaths within industrialized countries.

According to Akazili et al. (2011) poor health providers' attitude and fear of punishment by health care providers in the form of abusive language, lack of compassion and refusing to assist properly results in seldom decision making among the pregnant women to deliver in a health facility. In their studies, Esena et al. (2013) cited poor staff attitudes as one of the reasons for non-acceptability and low utilization of delivery care service. The women in this study

confirmed that they expected a humane, professional and courteous treatment from health professionals as well as a reasonable standard of physical environment else they consciously change their place of delivery and make same recommendations to others if they experience degrading and unacceptable behavior from health professionals.

Perceived quality of care, which only partly overlaps with medical quality of care, is thought to be an important influence on health care-seeking. This statement is affirmed in Esena et al. (2013) confirmed that assessment of quality of services "largely depends on people's own experiences with the health system and those of people they know".

In addition, another important factor that influences quality of health care service is accessibility to health centre. The standard is that every pregnant woman should have access to a health facility within a radius of less than or equal to 5km. Lack of transportation has been identified as one major contributor to many home deliveries in rural areas (Esena et al., 2013).

The challenge of access to health facilities is hardly separated from access to postnatal services after delivery. According to Abor et al. (2013) postnatal care is an essential part of safe motherhood. Postnatal check-ups provide an opportunity to assess and treat delivery complications and to counsel new mothers on how to care for themselves and their babies. The timing of postnatal care is very important given that most maternal and neonatal deaths occur within two days of delivery. Therefore, new mothers are expected to receive postnatal care within the first two days following delivery.

2.2.2 Antenatal care and skilled birth attendance

Antenatal care is commonly understood to have beneficial impact on pregnancy and birth outcomes. Antenatal care visits largely enhances early diagnosis and management of complications associated with pregnancy as well as promoting the health of the pregnant woman through nutrition counseling and education (WHO, 2013).

The concept of "birth preparedness" – where pregnant women, their families, and the wider community are encouraged to anticipate potential complications and develop strategies for transporting women to medical facilities prior to or at the onset of labor – is highly conducive to community mobilization interventions (UNDP, 2011). According to the UNDP's (2011) discussion paper on the social determinant to maternal health, a birth preparedness program in Cambodia encouraged village leaders, local midwives, and community volunteers to raise birth preparedness awareness at meetings and group events led to an increase in antenatal care by 22%, delivery in the presence of a midwife by 33% and hospital referral by 281% over one year period.

Kabakyenga et al. (2011) are of the view that with the assumption that "every pregnancy faces risks", women should be made aware of danger signs of obstetric complications during pregnancy, delivery and the postpartum. The knowledge will ultimately empower them and their families to make prompt decisions to seek care from skilled birth attendants. Moreover, in order for women to reach the place where appropriate care is provided, certain preparations prior to birth are required. Birth preparedness for a woman entails identifying a skilled attendant/health facility with delivery services, making transportation plans, saving money etc.

The birth preparedness and complication readiness (BP/CR) strategy aims at increasing both the effectiveness and timely use of key services for mothers and newborns, particularly during childbirth. This strategy is based on the assumption that a reduction in the delays to 1) decide to seek care, 2) reach the health facility, and 3) to receive appropriate care while at the facility, can be achieved through preparation for childbirth and possible complications (Lerberg et al., 2014).

2.2.3 Information, communication and education and skilled birth attendance

Health Information, Education and Communication (IE&C) at antenatal care requires time. The new antenatal care model (focus antenatal care) recommends 30 – 40 minutes for the first visit and 20 minutes for subsequent visits to carry out all activities including individual IE&C (WHO, 2010) and four times antenatal visits at least are recommended for a pregnant woman.

Prenatal counseling for pregnant women to recognize signs of complications are very important since some life-threatening complications are inevitable during either pregnancy, childbirth or postpartum. Hence teaching women and their families to have the knowledge and be able to recognize signs of obstetric complications and respond promptly, is an important goal of antenatal care. Kabakyenga et al. (2011) in their study found that the prevalence of knowledge of at least three key danger signs during the three phases; pregnancy, childbirth and postpartum was very low (19%). This may indicate that key danger signs are not emphasized during antenatal care, as the study shows that the majority of the respondents (68%) had attended at least four antenatal care visits during their last pregnancy.

Similarly, Samson (2012) posited that the minimal time used by health workers for counseling pregnant mothers during antenatal clinic is the missed opportunity to educate women on critical

issues related to the pregnant state, during birth, and after birth. A typical example is the interpretation of expected date of delivery from a scan machine. In some places provider are not informing pregnant mothers the meaning of expected date of delivery as this is interpreted as the exact date of delivery and when the labor pains start early before that date women end up delivering in their homes even if they were interested to deliver in health facilities.

Findings from Kabakyenga et al. (2011) revealed a clear association between knowledge of key danger signs during pregnancy or during the postpartum period with birth preparedness among women in rural areas of Mbarara district, Uganda. The association between knowledge of at least one key danger sign during pregnancy (OR=1.8, 95% CI: 1.2-2.6), knowledge of at least one key danger sign during postpartum (OR=1.9, 95% CI: 1.2-3.0) remained statistically significant even after adjusting for age, education and household assets ownership as potential confounders.

According to Whitworth et al. (2011) a review of prophylactic oral betamimetics for preventing preterm labor in singleton pregnancies found that previous preterm delivery is a strong predictor for preterm labor, and the earlier the birth, the more likely it is to be repeated at the same gestation period. According to the same review, preterm birth occurs in up to 6% to 10% of all births and is the major complication of pregnancy associated with perinatal mortality and morbidity.

Findings from Whitworth et al. (2011) emphasizes the need for quality care during the pregnant period of the woman to be in a better position of preventing deaths and disabilities to both mother and the new born. According to Umurungi (2010) women who started ANC in the first trimester were less likely to deliver at home; they were also more likely to have an adequate number of visits as per WHO recommendations (i.e. at least 4 ANC visits).

In the Gambia, failure on the part of most women who attended ANC to obtain skilled attendance was associated with the low levels of antenatal education on danger signs and complication readiness. Adequate prenatal counseling at the antenatal care improves proportion of skilled attendance at delivery (Pandey, 2012). He opines that antenatal care services create the opportunity for service providers to establish contact with the woman to identify and manage current and potential risks and problems during pregnancy. It also creates the opportunity for the woman and her care providers to establish a delivery plan based on her needs, resources and circumstances. Again it creates opportunity for screening for such conditions as HIV and Sexually Transmitted Infections (STIs), hypertensive disorders among others.

Hypertensive disorders during pregnancy occur in women with pre-existing primary or secondary chronic hypertension, and in women who develop new-onset hypertension in the second half of pregnancy.

According to the National Institute for Health and Clinical Excellence (NICE, 2010) hypertensive disorders during pregnancy carry risks for the woman and the baby. Hypertension in pregnancy remains one of the leading causes of maternal death globally. Hypertensive disorders during pregnancy may also result in substantial maternal morbidity. A UK study reported that one-third of severe maternal morbidity was a consequence of hypertensive conditions. A study from one region of the UK reported that 1 in 20 (5%) women with severe pre-eclampsia or eclampsia were admitted to intensive care. More recently, the long-term consequences for women with a diagnosis of hypertension during pregnancy have become clear, in particular chronic hypertension and an increase in lifetime cardiovascular risk (NICE, 2010).

Hypertensive disorders also carry a risk for the baby. In the most recent UK perinatal mortality report, 1 in 20 (5%) stillbirths in infants without congenital abnormality occurred in women with pre-eclampsia. The contribution of pre-eclampsia to the overall preterm birth rate is substantial; 1 in 250 (0.4%) women in their first pregnancy will give birth before 34 weeks as a consequence of pre-eclampsia and 8–10% of all preterm births result from hypertensive disorders. Half of women with severe pre-eclampsia give birth preterm (NICE, 2010).

Another equally important disease of public health concern during pregnancy is gonorrhea. According to Brocklehurst et al. (2012) gonorrhea in pregnancy has been associated with prelabour rupture of the membranes and preterm delivery.

Neisseria gonorrhoeae can be transmitted from the mother's genital tract to the neonate at the time of delivery and occasionally, when there is prolonged rupture of the membranes, it can be transmitted to the fetus before birth. The usual manifestation of neonatal infection is gonococcal ophthalmia neonatorum. The risk of transmission from an infected mother is between 30% and 47%. Gonococcal ophthalmia neonatorum begins in the first few days of life, is manifest by a profuse purulent conjunctival discharge and is frequently bilateral. If left untreated, this infection will eventually lead to blindness although the risk of blindness has not been accurately quantified. Occasionally the neonate may develop gonococcal infection elsewhere such as gonococcal arthritis. In the postpartum period gonorrhoea can cause endometritis and pelvic sepsis in the mother, which may be severe (Brocklehurst et al., 2012).

The findings from Brocklehurst et al. (2012) clearly attests to the fact that quality of health care during pregnancy cannot be compromised in the prevention and management of some of the sexually transmitted infections at critical periods such as that of pregnancy.

Tudor et al. (2011) in a review paper published that every year nearly 400,000 children are infected with HIV through mother-to-child transmission (MTCT), which is responsible for more than 90% of HIV infections in children. In high-income countries, the MTCT rate is less than 1% through perinatal prevention of mother-to-child HIV transmission (PMTCT) interventions (Tudor et al., 2011). Without preventive interventions in low and middle-income countries, the risk of transmission of HIV from mother-to-child ranges between 15% and 40%; 5%-10% during pregnancy, 10%-20% during labor and delivery, and 5%- 20% through breastfeeding (Tudor et al., 2011).

The toll of HIV on both mother and baby is enormous and hence antenatal care therefore provides an opportune service delivery contact point for detecting and management of the virus among pregnant women. However the number of times a pregnant woman visits and receives care either at the health facility or home with health personnel during the antenatal period is key. Tudor et al. (2011) posited that attending the antenatal clinic once during pregnancy is not enough to provide all steps of the PMTCT services. The proportion of pregnant women having at least four antenatal clinic visits during pregnancy is much lower; 39% in low-income countries, 47% in lower-middle-income countries and 75% in upper-middle-income countries (Tudor et al., 2011).

Findings from Umurungi (2010) revealed that women who had HIV test during ANC were less likely to deliver at home (53.3%) compared to those who didn't (74.8%) (OR=2.60, CI: 2.24-3.02, $p<0.01$). In terms of HIV testing during ANC and receiving results, women who had HIV test during ANC and received their results were less likely to deliver at home compared to those who did not receive them (OR=2.26; CI: 1.32-3.86, $p< 0.01$) irrespective of the results being positive or negative.

Chlamydia trachomatis is one other infection that is not only detrimental to the mother but also to the neonate. As a sexually transmitted disease it can be identified and treated during the antenatal period using simple antibiotics. In a review paper by Brocklehurst et al. (2012) a mother with Chlamydia infection during pregnancy and labor, can cause eye or lung infections in the newborn baby. The risk of transmission during birth varies, about 20% to 50% for eye infections and about 10% to 20% for infection of the lungs (Brocklehurst et al., 2012). Mothers may also be at increased risk of infection of the uterus.

2.2.4 Socio-cultural belief system and skilled birth attendance

A woman's chance of dying or becoming disabled during pregnancy and childbirth is closely connected to her social and economic status, the norms and values of her culture (UNFPA, 2012). The poorer and more marginalized a woman is, the greater her risk of death (UNFPA, 2012). In fact, maternal mortality rates reflect disparities between wealthy and poor countries more than any other measure of health. A woman's lifetime risk of dying as a result of pregnancy or childbirth is 1 in 39 in Sub-Saharan Africa, as compared to 1 in 4,700 in industrialized countries (UNFPA, 2012).

High maternal mortality rates are an indication not only of poorly functioning health systems, but also of deep-seated gender inequalities that leave women with limited control over decision-making and that restrict their access to social support, economic opportunities and health care (UNFPA, 2012; WHO, 2006).

In rural Ghana, institutional delivery has not increased mainly due to the fact that home delivery raises a woman's status in her community while seeking skilled attendance lowers it and it does

not also give women secrecy enough in labor (Amankwa, 2008). A study by Esena et al. (2013) in the Ga East Municipality on factors associated with the utilization of skilled delivery services, the lack of autonomy for women is one of the barriers to skilled attendance; the culture maintains that women must wait for approval from male relatives before seeking help.

Obeng (2008) similarly posited that cultural norms, either social or religious in origin and other acceptability factors can affect utilization of delivery services by women in labor even when these are within reach. Also (Bazzano et al., 2008 cf Joseph, 2008) working in rural Ghana found that home delivery raises a woman's status in her community, while seeking skilled attendance lowers it. Seeking assistance in childbirth wastes other people's time and that secrecy in labor was to be cherished- a luxury unavailable in a health facility.

According to Mikkonen et al. (2002) an important factor in the utilization of maternity care services, especially in Africa, is the cultural background of the woman. The cultural perspective on the use of maternal health services suggests that the need for pregnancy related services is determined not only by the presence of physical disease but also by cultural perception of pregnancy.

A study in Kenya by Alexandra (2010) for instance found that in Swahili culture it is considered bad luck to prepare for a baby before its birth. Too much preparation, they claimed, could result in a complication such as a stillbirth. It was also found that to guess the sex of the child or to give a gift is considered to be equally harmful. The highest level of preparation described by women who chose even homebirth was the purchase of birthing supplies, such as a razor to cut the umbilical cord, a few weeks before delivery. Similarly, a study in Nepal revealed that some cultural and religious practices, mostly in remote and rural areas, prevent women from accessing

and utilizing essential heath care services such as 10 days after child birth are considered to be impure and during that period, the women were secluded from the family members (Baral et al., 2010). Further, according to the same study, following marriage, a daughter- in-law is expected to perform domestic duties under the supervision of her mother- in- law, who is usually the primary decision maker in matters of child-rearing and care of the family.

In most African rural communities, maternal health services coexist with indigenous health care services; therefore, women must choose between the options (Yared et al., 2002). The use of modern health services in such a context is often influenced by individual/household/community perceptions of the efficacy of modern health services and the cultural beliefs of individual women. According to Gwamaka (2012) in many cases, the medical 'culture' may clash with the woman's culture. In the northern part of Tanzania traditional births attendants are the ones who determine the place of delivery among Masai tribe and they also arrange for the kind of diet required by the women after deliver. Findings from the same study revealed that labor is kept secret because any complication that develops means the women is adulterous and remedy for that is to mention the names of all the men who slept with her.

Further, studies in Zambia reveals that the placenta must be buried in a certain manner for a woman to continue bearing children, this is contrarily to medical knowledge.

Different ethnicities globally, have different cultural values and these cultural values may prevent women to access health facility for delivery. Knowing these values and addressing them in the community could improve delivery in health facilities.

Moreover, in many parts of Africa, women’s decision making power is extremely limited, particularly in matters of reproduction and sexuality. In this regard, decisions about maternal

care are often made by husbands or other family members (Yared et al., 2002; WHO, 2007; Baral et al., 2010).

Across the developing world, girls' health is determined more by social forces than biological ones. In some communities, women's health is valued less than that of men. Parents may prioritize their sons' over their daughters' lives and health. Girls and women often do not have control over financial resources or access to transportation, and are thus dependent on male relatives or mothers-in-law for mobility and access to health services (UNFPA, 2012).

In his studies Yalem (2010) found that most men agreed that they were entitled to take decisions about the health of their wives including ANC. They believed that it was right and correct for a husband to decide for his wife. "Being the head of the family, we husbands have responsibility for making the decision on family matters including health. Our wives don't have the power because they should be obedient to the decision of their husbands."

Availability of women's time is also important. In developing countries, women spend more time on their multiple responsibilities for care of children, collecting water or fuel, cooking, cleaning, and trade than on their own health (Yared et al., 2002; WHO, 2007).

The commitment from all levels needed to develop the human resource and systems necessary for skilled attendance is often limited by social and cultural norms, and these norms mostly place women at a lower status than men. Additionally, even when services may be available, the norms practiced at household level constrain professional care seeking. A typical situation was the one reported in Afghanistan where 87% of the women in Afghan communities require the permission of their husbands before seeking health care, and 45% believed a husband has the right to beat his wife if she disobeyed his orders (Yared et al., 2002).

Pregnancy and childbirth are individual, family and community events, rich in spiritual significance and power, cultural awareness, competency and openness are therefore essential in entering into a care relationship with a woman during this important time in her life. When a specific cultural practice has been identified as harmful and violation of human rights, skilled providers must carefully assess the usefulness of the practice in their area and with other skilled providers and local influential people to develop a plan to advocate a change (Amankwa, 2008).

The role of traditional birth attendants (TBAs) is prominent in most countries across the globe especially in the developing world. Several factors influence the TBA's role. Her status within the community, and the ability and willingness of a family to reimburse her, even in kind, are significant. She may be sent for early in labor, at which time she provides full support to the mother, delivers the baby, and attends to the immediate care of the mother and baby— including cutting the cord, cleaning the mother, bathing the baby, and disposing of the placenta (Indira et al., 2004).

According to Yalem (2010) most Christians mentioned that St. Mary (Mother of Christ) helps them to have safe births through prayers instead of taking the laboring mother to the health facility. They believe the prayer will help the mother to have an easy delivery without the assistance of a skilled attendant. Per the same study, some of the participant mothers believed that there is an evil spirit who possessed every mother and will never be exorcised; it is only through prayer that the burden of suffering can be reduced.

Other traditionally related practices such as firing a bullet and doing other sound emitting activities are believed to let the mother's uterus to be open enough to facilitate a safe delivery, (Yalem, 2010).

Alexandra (2010) in his study revealed that of all the women interviewed, 32% acknowledged using herbal remedies during their pregnancies. The two most common types were drinks made from boiling either the roots or the leaves of a plant. These medicines were taken to treat pain and to assist during delivery, and could be prepared at home or by a TBA. There also seemed to be a cultural divide between the preferred brew. While some women overwhelmingly favored the use of roots for pain relief, Swahili-Muslims were more likely to use leaves meant to quicken labor and ease delivery. The secrecy surrounding traditional medicine makes it especially hard to target through public health education. Names and recipes are largely left unspoken and the compounding fear of "harsh" consequences leaves a wide gap in knowledge among health workers in Kenya.

2.2.5 Demographic factors and skilled birth attendance

Socio-demographic factors influencing utilization of maternal health care services in less developed countries include residence or distance to health services, age, marital status, parity, and economic status (James et al., 2011).

Yared et al. (2002) opines that the greater confidence and experience of the older and higher parity women, together with greater responsibilities within the household and for child care, have been suggested as explanatory factors for their tendency to use services less frequently. In her study, Yvonne (2010) found that the percentage of women delivering in health care facilities decreased with age from 47.6% at 15-19 years to 22.3% at 45-49 years, and that older women were more likely to deliver at home, with the odds increasing with increasing age. Patience et al. (2013) argues that though mother's age could be used as a proxy for the woman's accumulated

knowledge of health care services, which may have a positive influence on the use of health services, but because of development of modern medicine and improvement in educational opportunities for women in recent years, younger women might have an enhanced knowledge of modern health care services and place more value upon modern medicine.

Maternal formal education has also been shown repeatedly (Yared et al., 2002; Amankwa, 2008; Sabine et al., 2009) to be positively associated with the utilization of maternal care services although, in general, women in higher socioeconomic groups tend to exhibit patterns of more frequent use of maternal health services than women in the lower socioeconomic groups.

The mother's level of education has an important impact on the use of maternal health services. Therefore improving educational opportunity for women may have a large impact on improving the use of such services (Patience et al., 2013). Maternal education is found to enhance female autonomy so that women develop greater confidence and capabilities to make decisions regarding their own health. It is also likely that educated women seek out higher-quality services and have greater ability to use healthcare inputs to produce better care. It is argued that better educated women are more aware of health problems, know more about the availability of health care services, and use this information more effectively to maintain or achieve good health status (Patience et al., 2013). A number of studies have shown a positive relationship between women's level of education and utilization of maternal health care services (Sabine et al., 2009; Amankwa 2008; Patience et al., 2013); mother's education may also act as a proxy variable of a number of background variables representing women's higher socioeconomic status, thus enabling her to seek proper medical care whenever she perceives it as necessary.

According to Sabine et al. (2009), women who are working and earning money may be able to save and decide to spend it on a facility delivery. However, in many settings women either do not earn money for their work or do not control what they earn. An increased range of movement and better access to information are suggested as reasons why formal work may promote women's use of health facilities for childbirth.

Yvonne (2010) found similar results in her study. According to her, farmers and manual workers were more likely to deliver at home than women working in professional, technical and management areas as well as those in clerical or sales domains.

Farming women are less likely to have skilled attendance at delivery than women in other occupations. This may stem from limited financial resources and health services in rural areas. A number of studies do not find any effect of maternal working status or occupation, while others find that formally employed women are more likely to use delivery services (Sabine et al., 2009; Amankwa, 2008).

Apart from maternal occupation, one other important predictor to the usage of maternal health services (most especially antenatal care services) is the woman's marital status (Amankwa, 2008; Yalem, 2010). Single women were almost three times more likely to deliver at a health facility than married women (OR=2.59, CI: 1.97-3.24, $p < 0.01$). While just over half (51.5%) of single women used health facilities for delivery, most (>70%) married women and women living in a permanent relationship did not use health facilities for their delivery (Yvonne, 2010).

Findings from Yalem's study pointed out that married women were more likely to received antenatal care services than single mothers. This could be due to fear of stigma because a pregnancy without marriage is not accepted in most rural communities in Africa and most parts

of the world. Moreover, these un-married mothers may want to hide their pregnancy from their parents and the community instead of receiving antenatal care services.

A study in northern Tanzania conducted by Magoma et al. (2010) revealed that women described ANC visits as beneficial for their health, and a rare opportunity to leave their households and exert control over their pregnancies. According to the study, although women usually require permission from husbands to leave their households, they do not typically need permission from their husbands to attend ANC clinics. Only women married to older and relatively less educated husbands reported needing such permission.

The risk of a woman of dying in pregnancy and childbirth depends on the general reproductive health of the mother and the number of pregnancies she has had in her lifetime. The higher the number of pregnancies, the greater the lifetime risk of pregnancy related deaths (WHO, 2006). Maternal age also has an impact on increasing the risk of dying. Girls below 18 years and women older than 35 years are more likely to have pregnancy related complications that may lead to maternal death.

Parity which is the number of births a woman has had is found as one of the significant predictors for selection of place of delivery place (Yalem, 2010; Yvonne, 2010). According to Yvonne (2010) women with higher parity were more likely to deliver at home (Parity 2-3), with the odds of delivering at home increasing as the parity increased.

Per Yalem's studies, mothers with 1-4 children were more likely to give birth at the health facility than women with more than four children. The possible explanation for selection health facility for delivery services among women with lower party implies that those women might be younger and has better understanding about the advantages of maternal health care. In addition,

lower parity woman might look for delivery assistance more than mothers with high parity due to their less experience in child birth that might develop fear about the difficulties during labor. This could motivate them to seek maternal health care.

According to the same study, Yalem (2010) posited that the other possible explanation for the low utilization of maternal health care services among higher parity women could be due to resource and time constraints because of their big family size and caring for their children and other house work load. In addition, high parity women could have more experience on child birth and they might think delivery is normal and develop self-reliance and preferred to give birth at home with mothers and relatives assistance.

In terms of religion, results from Patience et al. (2013) indicate that Christian women showed high tendency of using all forms of maternal healthcare services than those with no religious background. Christian women were found to be more likely to use antenatal care and postnatal care. Muslim women were also more likely to use prenatal care than those with no religious background. They were also more likely to use antenatal care as well as postnatal care. Muslim women were more likely to deliver at a health facility than those with no religious background.

2.3 Conclusions

Inadequate means of transport or in some cases lack of transport makes referrals of pregnancy complications to the next level difficult.

Due to inadequate health personnel, equipment and logistics response to emergency obstetric cases delay.

Most health systems de-emphasize on the key danger obstetric danger signs coupled with inadequate time for counseling during antenatal care visits lead to missed opportunities.

In most African societies, home delivery raises a woman's status. Also in some African cultures, it is impure and bad luck to prepare for unborn child. Further in some cultures, the placenta of a woman cannot be buried anyhow but in a manner that is deemed culturally fit.

The review of literature revealed that, older and high parity women were more likely to deliver at home. Un-married women were more likely to hide their pregnancies thus contributing to late start of antenatal care visits.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

Methodology is the coherent set of rules and procedures which can be used to investigate a phenomenon or situation.

The study employed descriptive cross sectional methods to generate the required data. The sampling procedures, data collection techniques and tools, and the analysis of the data were critically considered to ensure minimal biases and make the data more reliable and valid.

Both qualitative and quantitative data were collected. Analyses of the quantitative data was done using SPSS version 18.0. Results for the quantitative data are presented in tables and figures and that for the qualitative data are presented according to the themes that came up during discussions.

3.1.0 Profile of the study area

3.1.1 Location and population

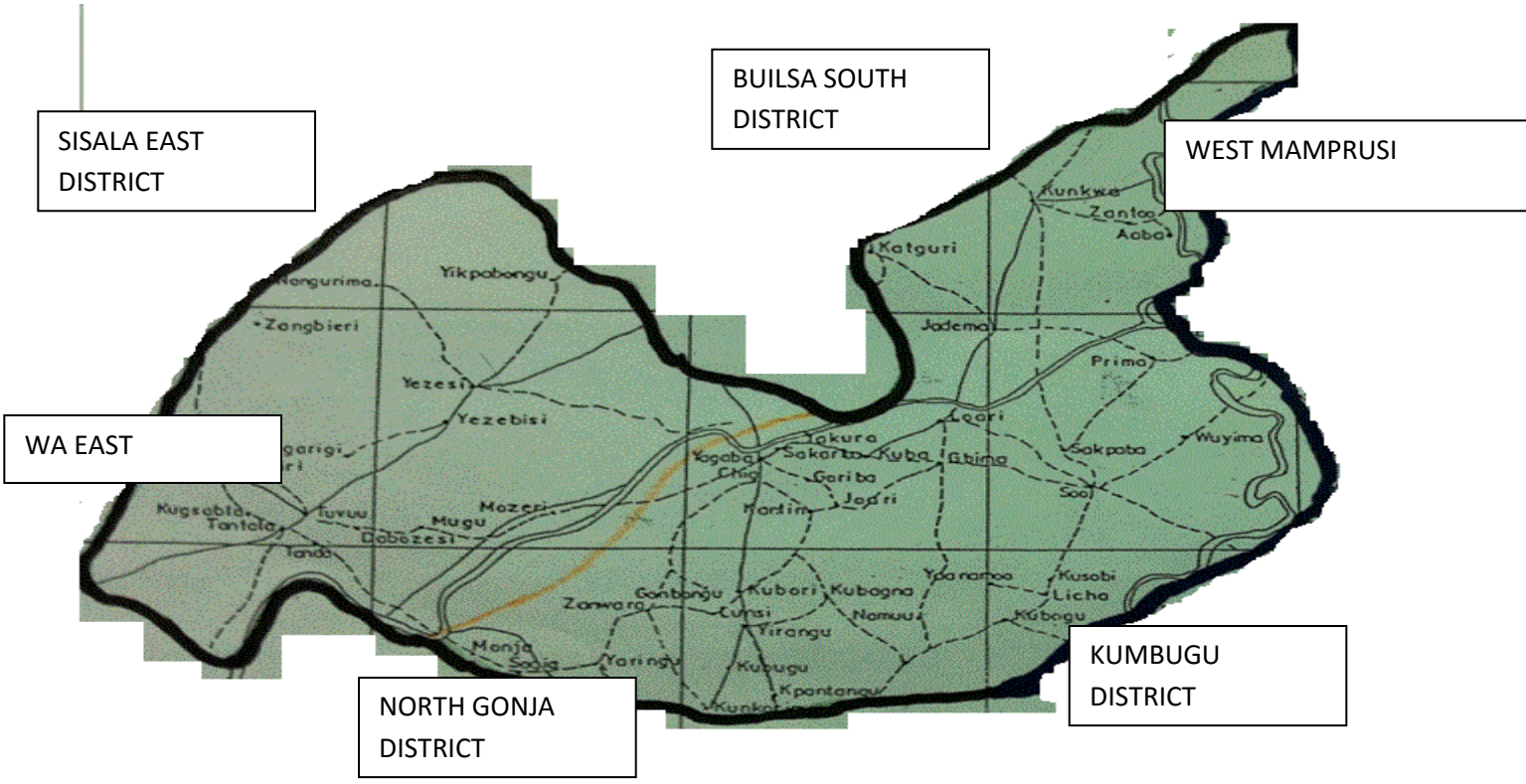
The Mamprugu Moagduri District was curved from West Mamprusi District with its capital at Yagaba. It forms part of the new districts and municipalities created in the year 2012. The district is one of the twenty-six (26) administrative districts that make up the Northern Region of Ghana. The district is roughly located within longitudes 0.35^0C W and 1.45^0C W, and Latitudes 9.55^0C N and 10.35^0C N.

The district shares boundaries with two other regions and six districts in all. To the West, the district shares boundaries with Wa East and Sisala East districts of the Upper West region. The Mamprugu Moagduri district also shares boundaries with North Gonja and Kumbugu districts south-west and south-east respectively.

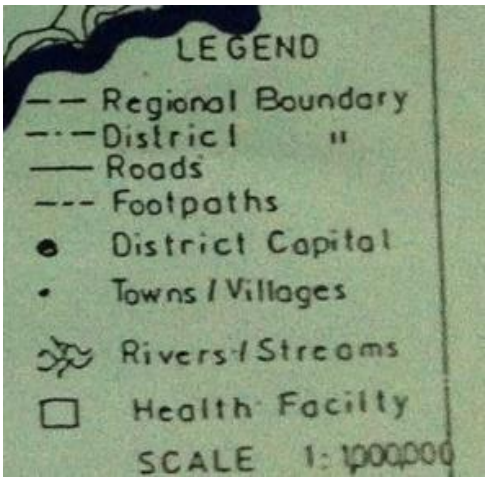
The capital of the Builsa South district, Fumbisi which is to the north, has very strong economic ties with Yagba the capital of the Mamprugu Moagduri district. Lastly but not least, the West Mamprusi district which is the mother district of the Mamprugu Moagduri district shares boundaries with it to the north-east.

Below is a pictorial view of the Mamprugu Moagduri district;

Figure 2. District Map



Source: DHMT Annual Report (2013)



For purposes of bringing health services closer to people, the district is further divided into four sub districts, namely Kunkwa, Yagba, kubori, and Yikpabong sub districts. The district has an

estimated number of 80 communities hence the need for the sub divisions to make administration of the district quite easy.

According the projections of the 2010 population and housing census, the district population is about sixty-two thousand, one hundred and sixty. Out of this number, the expected number of deliveries is 1,740 using a recommended projection of 2.8% expected pregnancies from the total population with a frontline staff strength (midwives, community health nurses/officers, enrolled nurses, and physician assistants) of thirteen.

3.1.2 Infrastructure

In terms of health infrastructure, the district has four functional health centers and two functional Community-based Health Planning and Services (CHPS) compounds dotted around the district. The Mamprugu Moagduri District has three educational circuits including Yagaba circuit, Yizesi circuit and Kubori circuit with a total number of twenty-six (26) kindergartens, thirty-three (33) Primary schools, and twelve (12) Junior high schools, and one Senior High School located in the district capital Yagba.

3.1.3 Water and sanitation

The principal source of water supply in the district are boreholes fitted with pumps, hand dug wells (protected and unprotected), and streams. Most people in the district rely on surface water for drinking. Both human beings and animals share this same source of water most especially the stream water.

3.1.4 Agriculture

Along the White Volta River are large stretches of arable land, good for the cultivation of rice and other cereals. Crops such as millet, beans, maize, rice and groundnuts are also cultivated in the district.

The Shea tree is grown wildly and the nuts harvested regularly. Ample land is available for livestock including; cows sheep, goats and pigs and acquisition of land for farming is not a problem.

Processed commodities in the district include; shea butter, groundnut oil, rice, and dawadawa.

3.1.5 Culture/tradition

The Mamprusis and the Builsas are the two major ethnic groups in the district. The Fulanis are also found in the district who the herdsmen for the indigenous people. The typical political traditional arrangement include the following: The Chief, The Wudanna who is the linguist to the Chief in the village and leader of the elders; The Kpanadana (the elder of the community and advisor of the chief), The Tindana (the chief priest), The Kanbonnaba (the chief warrior), The Nachinnaa (the Youth Leader), The Mangazia (The Women's Leader), The Fongni Kpamma (The sectional Heads). The Mamprugu Moagduri District falls under the Soo Traditional Area.

3.2 Study population

The study population is women of reproductive age, and opinion leaders. Women of reproductive age are the direct beneficiaries of maternal health services, hence the best target group to interview in order to unearth some of the determinants that influence their usage of maternal health services. The opinion leaders on the hand are the custodians of culture and heads of decision making structure at the community level, since health production primarily begins at the household level, the opinion leaders were the best people to discuss with in order to get some of the determinants of the usage of maternal health services in the communities. The women who delivered in the last one year prior to the study were used as proxy since this sub-group within the women of reproductive age should have gone through the process of prenatal to postnatal periods.

3.3 Study design

The study design is a cross sectional descriptive study. At the household level data was collected from women of reproductive age between 15-49 years, to find out some of the barriers to the effective utilization of the modern health care services, of which skill birth delivery is a part in the district.

Each set of the dataset tool was pre-tested in West Mamprusi district (a district similar in population characteristics) to test for clarity, validity and reliability of the questions after which the tool was revised accordingly and finalized for use.

3.4 Sample size and sampling techniques

The Cochran and Snedecor (1989) sample size determination formula was used to determine the sample size;

$n=z^2\ pq/d^2$ where

n is the sample size desired

z is the statistical certainty chosen= 1.96 at a confidence level of 95%

p is the proportion of skill delivery =16.6 (0.166)

q is the estimated proportion of home delivery in the district = 1-p = 1-0.166=0.834

d is the precision desired = 0.05 (5%)

$n=(1.96)^2(0.166)(0.834)/(0.05)^2$

n=(3.8416)(0.1384)/(0.0025)

n=213

In all two hundred and twenty (220) women of reproductive age in 220 households were interviewed.

Two of the four sub districts (Yagba and Kubori) were selected using simple random technique, where the four sub districts were written on pieces of papers of equal sizes and mixed thoroughly. Two of the pieces of papers were picked one at a time without replacement for the study.

Due to resource constraints, fourteen communities (14) from the two sub districts were involved in the study. The percentage contribution to the district's population by the two sub districts Kubori and Yagba are 26.6% and 24.6% respectively. Non proportionally, seven communities

were assigned to each sub district. The seven communities were gotten from the two sub districts using simple random techniques (by lottery).

At the community level sixteen households were selected with the assistance of a community health volunteer. The sixteen households per community were derived from the fact that the communities were selected non proportionally, thus on average the 213 households divided by 14 communities will be 15.2 households per community, hence this was rounded to the nearest whole figure which is 16 households per community.

In communities where the number of households were more than 40 (verified from community data such as the book of list of household names for the distribution of drugs in the control of some neglected tropical diseases, NTDs), such communities were segmented into equal sizes and one of the segments chosen using simple random techniques where each of the identified segments were given equal chance of being part of the study in a basket with each segments' name on a piece of paper.

In communities where upon inquiry using available community data such as the book of list of household names for the distribution of drugs in the control of some neglected tropical diseases (NTDs), the community is less than 40 households, all the names of the households were written on a sheet of paper serially. The same technique was used in those communities where a segment was chosen.

When the list of households was gotten in each community (i.e. the sampling frame), a sampling interval ***k*** was calculated using 16 households per community as the denominator. An entry point or starting point by lottery using the serial numbers of the households on smaller pieces of papers in a basket was determined.

At the household level, the proxy that was used first to get respondents (i.e. the women of reproductive age) was the age (the age must fall between 15-49 years). Secondly if two or more women were qualified in the same household based on the age, the next criteria was who had delivered before within the past 12 months , and if both or more have delivered within the same time period, the woman with the youngest child was chosen to respond to the questionnaire.

To get the communities where the focus group discussions were conducted, each of the selected sub districts was grouped into two; communities with functional health facility in the same sub district and communities without health facility in the same sub district. Simple random technique (balloting using names of communities on pieces of papers) was used to select one from each of the two groups of communities. Five opinion leaders per community was used during the focused group discussion, thus in all twenty opinion leaders were part of the focused group discussions.

3.5.0 Variables

3.5.1 Independent variables

The variables that affect the outcome (i.e. usage of skill attendants during delivery) considered in the study include; maternal age, parity, STIs investigated during pregnancy and number of antenatal visits (these were quantitatively measured), marital status, maternal educational level**,** occupation**,** gestation age at first visit, place of accessing antenatal care (were qualitatively measured)

3.5.2 Dependent variables

The outcomes as a results of the independent variables are; place of delivery**,** level of awareness of birth preparedness**,** knowledge of danger signs of labor**,** knowledge of danger signs of pregnancy**,** knowledge of danger signs after birth/postpartum danger sings**,** and importance of attending antenatal care sessions**.**

3.6 Data collection methods and tools

The main method of collecting the data was an interview using a questionnaire for the women of reproductive age, and focus group discussion using a focus group discussion guide for opinion leaders. The structured questionnaire was pre-tested by trained research assistants who could speak the local language.

Four focus group discussions were conducted in the two selected sub districts, two in each sub district. A focused group discussion guide was used to solicit information from opinion leaders in four communities. Discussants were made to sit in a circular manner. Questions/themes in the guide were read first in the English language and secondly translated into the local dialect by field assistant to the understanding of all discussants. Responses were noted one after the other by writing until the question/theme was fully exhausted to the satisfaction of the researcher. Probing words such as why, how etc were used to deduce information from discussants.

3.7 Data analysis and presentation methods

The quantitative aspect of the data was analyzed using SPSS 18.0 software including the percentages and for the determination of associations in the bivariate analyses. The results generated from the software were presented in the form of tables. The significance level was set at $p<0.05$.

Logistic regression analysis was run with some variables that relate to explanatory variables in the conceptual framework as independent variables and skilled birth attendance as outcome variable.

The qualitative data was analyzed using the Grounded Theory strategy (Creswell, 2009). With this, multiple stages of data from health staff, traditional birth attendants, and men were collected and refined to drive the interrelationships of the categories of data gathered. According to Creswell (2009) two primary characteristics of this strategy is a constant comparison of data with the different sampled groups to maximise the similarity and differences in the information gathered. The qualitative data gather from the various groups was first read thoroughly to find similarities and contrasts on the themes that were discussed.

Participants of the focused group discussions (FGDs) openly discussed and expressed different views, opinions, practices and experiences. The FGDs were coded line by line as the first step of grounded theory. Potential categories were developed in order to derive relationships between identified categories. The categories developed were flexible enough to reach saturation through coding and categorizing. The sub categories had relationships with the core category which enabled it to answer the research question "What are the determinants of skill birth attendants in the Mamprugu Moagduri District of Northern Ghana?"

In general, the findings of the FGD were grounded in the data which represented the phenomena being studied which also agreed with the way the grounded theory is approached. This played its own role in increasing the validity of the study. The process of data analysis and interpretation continued until categories and theoretical connections between categories were completed. The study also included constant comparison, triangulation in order to increase the credibility of the study.

3.8 Quality control

Questionnaire was administered by trained research assistants who could speak the local language. The questionnaire was pre-tested by all four research assistants who agreed to participate in the data collection for clarity, validity and reliability of the questions after which the tool was revised accordingly and finalized for use.

The principal investigator supervised each research assistant on the field in the communities where the data was being generated to ensure compliance with methodology of generating the data.

The focused group discussions with opinion leaders were conducted by the principal investigator himself.

3.9 Ethical considerations

The Regional as well as the District Director of Health Services of the Mamprugu Moagduri District were involved in discussions about the study and accordingly, a verbal consent for the study to proceed in the district.

Approval by signing/thumbprint was sought from participants at the household level and with the TBAs before the interviews started. Those who did not agree were excluded from the study. In order to reduce refusal, the rationale of the study was explained to participants. All responses were kept confidential and anonymous. Informed verbal consent was also obtained from all individuals participating in the FGDs.

The hard copy of the report copy was given to the district health management team where the study was conducted. The district director of health services in the district agreed to take excepts of the findings to be highlighted in their annual report for the year ending 2014.

CHAPTER FOUR

RESULTS

4.0 Introduction

The results for the quantitative data have been analyzed and presented under sub headings which show the major themes explored in the study. The major headings under which the quantitative data have been presented are demographic characteristics of respondents, quality of skill birth attendance, quality of antenatal care services, and socio-cultural factors that influence skilled birth attendance.

4.1 Demographic characteristics of respondents

A total of 220 women of reproductive age were included in the survey. About 35.0% of the respondents were in their late twenties. The mean, minimum, and maximum ages of the respondents were 29.06, 17, and 47 years respectively. The largely married women (n=216, 97.3%) were predominantly Moslems (n=175, 79.5%). More than three quarters (n=182, 82.7%) of the women did not have any form of formal education and just few (n=38, 17.3%) had basic education. None of the women surveyed had any form of Secondary education. Farming was the main occupation (n=141, 64.1%) of the women (see Table 4.1).

Table 4.1: Demographic characteristics of respondents

Variable	Frequency	Percent
Age		
15-19	7	3.2
20-24	42	19.1
25-29	77	35.0
30-34	50	22.7
35-39	24	10.9
40-44	15	6.8
45-49	5	2.3
Total	220	100.0
Religion		
Moslem	175	79.5
Christianity	39	17.7
Traditional African religion	6	2.7
Total	220	100.0
Educational status	**Frequency**	**Percent**
None	182	82.7
Primary	31	14.1
Junior High	7	3.2
Total	220	100.0
Marital status		
Single	6	2.7
Married	216	97.3
Total	220	100.0
Occupational Status		
Trader	36	16.4
Farmer	141	64.1
Housewife	31	14.1
Hair dresser	4	1.8
Seamstress	7	3.2
Student	1	0.5
Total	220	100.0

Source; Field Survey (2014)

Amongst women who have between one to three children, the probability that all the three children were alive as compared to those women with more than three children was very high, $p<0.000$ (Table 4.2).

Table 4.2: Bivariate analysis of number of births and births alive

Variable	N	Births alive			Test Statistics	
		1-3 n(%)	4-6 n(%)	6+ n(%)	χ^2	p-value
Birth interval						
1-3	103	103(100)	0(0.0)	0(0.0)	343.235	0.000
4-6	101	9(8.9)	92(91.1)	0(0.0)		
6+	16	0(0.0)	4(25.0)	12(75.0)		
Total	220	112(50.9)	96(43.6)	12(5.5)		

Source; Field survey (2014)

Though religion, education, marital status, and occupational status did not have statistically significant differences on place of delivery, in terms of proportions more Christians (n=18, 46.2%), and seamstresses (n=4, 57.1%) tend to deliver with skill attendant (Table 4.3).

Table 4.3: Bivariate analysis of demographic features and place of delivery

Variable:	N	Place of delivery			Test Statistic	
		Home with TBA n (%)	Home with health professional's assistance n (%)	Health facility with health professional assistance n (%)	χ^2	p-value
Religion						
Moslem	175	130 (74.3)	4 (2.3)	41 (23.4)	7.877	0.096
Christianity	39	21 (53.8)	3 (7.7)	15 (38.5)		
Traditional African Religion	6	4 (66.7)	0 (0.0)	2 (33.3)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		
Educational status						
None	182	130 (71.4)	6 (33.0)	46 (25.3)	0.914	0.922
Primary	31	20 (64.5)	1 (3.2)	10 (32.3)		
Junior High	7	5 (71.4)	0 (0.0)	2 (28.6)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		
Marital status						

Single	6	4 (66.7)	0 (0.0)	2 (33.3)	0.322	0.851
Married	214	151 (70.6)	7 (3.3)	56 (26.2)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		
Occupation						
Trader	36	24 (66.7)	0 (0.0)	12 (33.3)	14.321	0.159
Farmer	141	98 (69.5)	7 (5.0)	36 (25.5)		
Housewife	31	26 (83.9)	0 (0.0)	5 (16.1)		
Hairdresser	4	4 (100)	0 (0.0)	0 (0.0)		
Seamstress	7	3 (42.9)	0 (0.0)	4 (57.1)		
Student	1	0 (0.0)	0 (0.0)	1 (100)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		

Source; Field Survey (2014)

Early antenatal care (starting antenatal visits within the first trimester of pregnancy) visits amongst Christian women was higher than the other religious denominations, $p<0.05$. All the women of the Traditional African religion started antenatal care visits late. In terms of occupation of the women surveyed, the probability of a farmer, trader, hairdresser, and a seamstress to start attending antenatal visits was statistically significant, $p<0.05$. However, housewives are interestingly likely to start antenatal visits late. Educational level and marital status did not produce any statistically significant difference (Table 4.4).

Table 4.4: Bivariate analysis of demographic features and antenatal care visits

Variable	N	Start of ANC		Test statistic	
		Early start	Late start	χ^2	p-value
Religion					
Moslem	89	55 (61.8)	34 (38.2)	7.491	0.024
Christian	23	18 (78.3)	5 (21.7)		
Traditional African Religion	3	0 (0.0)	3 (100)		
Total	115	73 (63.5)	42 (36.5)		
Education					
None	95	61 (64.2)	34 (35.8)	0.194	0.908
Primary	17	10 (58.8)	7 (41.2)		
Junior High	3	2 (66.7)	1 (33.3)		
Total	115	73 (63.5)	42 (36.5)		
Marital status					
Single	5	3 (60.0)	2 (40.0)	0.027	0.869
Married	110	70 (63.6)	40 (36.4)		
Total	115	73 (63.5)	42 (36.5)		
Occupation					
Trader	12	8 (66.7)	4 (33.3)	10.598	0.031
Farmer	78	53 (67.9)	25 (32.1)		
Housewife	20	7 (35.0)	13 (65.0)		
Hairdresser	1	1 (100)	0 (0.0)		
Seamstress	4	4 (100)	0 (0.0)		
Total	115	73 (63.5)	42 (36.5)		

Source; Field Survey (2014)

Apart from religion where Christians were more probable than Moslems than Traditionalists ($p<0.01$) to attend antenatal care four or more times, educational level, and occupation did not yield statistical significance (Table 4.5).

Table 4.5: Bivariate analysis of demographic features and number of antenatal care visits

Variable	N	Number of ANC visits			Test Statistic	
		No ANC booklet	1-3	4 plus	χ^2	p-value
Religion						
Moslem	175	86 (49.4)	35 (20.0)	54 (30.9)	17.123	0.002
Christianity	39	15 (38.5)	1 (2.6)	23 (59.0)		
Traditional African Religion	6	4 (66.7)	2 (33.3)	0 (0.0)		
Total	220	105 (47.7)	38 (17.3)	77 (35.0)		
Educational status						
None	182	87 (47.8)	31 (17.0)	64 (35.2)	0.379	0.984
Primary	31	14 (45.2)	6 (19.4)	11 (35.5)		
Junior High	7	4 (57.1)	1 (14.3)	2 (28.6)		
Total	220	105 (47.7)	38 (17.3)	77 (35.0)		
Occupation						
Trader	36	25 (69.4)	3 (8.3)	8 (22.2)	13.711	0.187
Farmer	141	61 (43.3)	26 (18.4)	54 (38.3)		
Housewife	31	13 (41.9)	8 (25.8)	10 (32.3)		
Hairdresser	4	3 (75.0)	0 (0.0)	1 (25.0)		
Seamstress	7	2 (28.6)	1 (14.3)	4 (57.1)		
Student	1	1 (100)	0 (0.0)	0 (0.0)		
Total	220	105 (47.7)	38 (17.3)	77 (35.0)		

Source; Field Survey (2014)

The knowledge level of married women on danger signs of pregnancy was significant, $p<0.05$. Though occupational status did not show statistical significance, farming women, traders, and seamstresses in terms of proportion were more knowledgeable of danger signs of labor than hairdressers and housewives. However, housewives, seamstresses, and hairdressers were more probable, $p<0.05$ to be knowledgeable in danger signs after birth than farmers and traders (Table 4.6).

Table 4.6: Bivariate analysis of demographic features and knowledge of danger signs of pregnancy

Variable	N	Danger signs of pregnancy		Test Statistic	
		Yes n (%)	No n (%)	χ^2	p-value
Marital status				5.194	0.028
Single	6	4 (66.7)	2 (33.3)		
Married	214	198 (92.5)	16 (7.5)		
Total	**220**	**202 (91.8)**	**18 (8.2)**		
Occupational status				8.936	0.112
Trader	36	33 (91.7)	3 (8.3)		
Farmer	141	121 (85.8)	20 (14.2)		
Housewife	31	26 (83.9)	5 (16.1)		
Hairdresser	4	3 (75.0)	1 (25.0)		
Seamstress	7	7 (100)	0 (0.0)		
Student	1	0 (0.0)	1 (100)		
Total	**220**	**190 (86.4)**	**30 (13.6)**		

Source; Field Survey (2014)

According to Table 4.7, about 70.5% of women delivered home without health personnel assistance and 19.5% of those who delivered at home did so because they had no means of transport to a health facility to deliver.

Table 4.7: Knowledge of women of reproductive age on skill birth attendance

Variable	Frequency	Percent
Place of delivery		
Home with TBA	155	70.5
Home with health professional's assistance	7	3.2
Health facility with health professional assistance	58	26.4
Total	**220**	**100.0**
Reasons for delivery at home		
Cannot tell	57	25.9
Easy and sudden birth	104	47.3
Distance from house to health facility is very far	43	19.5
Ignorance on our part (i.e. women)	12	5.5
Traditional Birth Attendants are always there in the community	2	0.9
Health workers don't work at night	2	0.9
Total	**220**	**100**
Additional opinions about why women still deliver at home		
Some births are naturally easy	77	35
Husbands fear bills	38	17.3
No means of transport	64	29.1
Inexperienced nurses	16	7.3
TBAs are more caring	25	11.4
Total	**220**	**100**
Who decides for you where to deliver		
No one/myself	119	54.1
Husband	66	30
Mother in-law	9	4.1
Father in-law	3	1.4
Sister in-law	2	0.9
Nurse	21	9.5
Total	**220**	**100**
Where did the fellow choose for you to deliver?		
Health facility	127	57.7
Traditional birth attendant's house	93	42.3
Total	**220**	**100.0**

Source; Field Survey (2014)

Table 4.8 revealed that expectant mothers whose husbands decided for them the place to give birth where more likely to deliver at the health facility (p=0.004).

Table 4.8: Bivariate analysis of who decides for women where to deliver and place of birth

Place of delivery	N	Who decides for you where to deliver?						Test Statistics	
		No one/myself	Husband	Mother in-law	Father in-law	Sister in-law	Nurse	χ^2	p-value
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Home with TBA	155	96 (61.9)	35 (22.6)	4 (2.6)	1 (0.6)	2 (1.3)	17 (11.0)	25.987	0.004
Home with health professional's assistance	7	2 (38.6)	5 (71.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Health facility with health professional assistance	58	21 (36.2)	26 (44.8)	5 (8.6)	2 (3.4)	0 (0.0)	4 (6.9)		
Total	**220**	**119 (54.1)**	**66 (30.0)**	**9 (4.1)**	**3 (1.4)**	**2 (0.9)**	**21 (9.5)**		

Source; Field Survey (2014)

Women of reproductive age had several reasons why most deliveries are done at home. Dominant among the reasons include ignorance on the part of the women on the relevance of seeking for skill birth attendance, far distances between health facility and homes, easy and sudden births, health workers do not work at night, and TBAs are always available, p=0.000 (Table 4.9).

Table 4.9: Bivariate analysis of reasons for home deliveries

Variable	N	Place of delivery			Test Statistic	
		Home with TBA	Home with health professional's assistance	Health facility with health professional assistance	χ^2	p-value
		n (%)	n (%)	n (%)		
Reasons for home delivery						
Cannot tell	57	1 (1.8)	0 (0.0)	56 (98.2)	207.328	0.00
Easy and sudden birth	104	100 (96.2)	4 (3.8)	0 (0.0)		
Distance from house to health facility is far (>5 km)	43	38 (88.4)	3 (7.0)	2 (4.7)		
Ignorance of the importance of facility delivery	12	12 (100)	0 (0.0)	0 (0.0)		
TBAs are always there in the community	2	2 (100)	0 (0.0)	0 (0.0)		
Health workers do not work at night	2	2 (100)	0 (0.0)	0 (0.0)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		

Source; Field Survey (2014)

4.2 Antenatal Care Services

A little over one-third (n=77, 35.0%) of women surveyed adequately attended the recommended number of times (4 or more visits) of antenatal care visits. Again a third of the women started accessing antenatal care services in the first trimester of pregnancy (attending antenatal care in

the first trimester of pregnancy is the recommended period by WHO). Husbands largely decide (n=78, 35.5%) for their wives when to start antenatal care visits apart from those women who decide for themselves. More than 40% of the women surveyed could provide ANC booklet as evidence of having attended ANC services. Of the women who could produce their ANC booklet, most (97.3%) of them were weighed (Table 4.10).

Table 4.10: Antenatal care visits

Variable	Frequency	Percent
Number of times ANC services were sought for (verified from ANC booklet)		
No ANC booklet	105	47.7
1-3	38	17.3
4 and above	77	35.0
Total	220	100.0
Stage of pregnancy at first visit (verified from ANC booklet)		
No ANC booklet	105	47.7
1st Trimester	73	33.2
2nd Trimester	33	15.0
3rd Trimester	9	4.1
Total	220	100.0
Does someone decide for you when to start attending antenatal care visits?		
Yes	127	57.7
Who largely decides for you when to start attending antenatal care visits?		
No one	93	42.3
Husband	78	35.5
Mother in-law	17	7.7
Father in-law	12	5.5
Sister in-law	9	4.1
Myself	11	5.0
Total	220	100.0

Source; Field Survey (2014)

Antenatal care services received during visits varied as more than three quarters of the women had their blood pressure checked. Also more than 80% of the women received abdominal examination as well as had their baby's heart beat checked. Of the women surveyed, a little over two thirds had their urine and blood samples taken and tested for various conditions. The same proportion (2/3) of the women received folic acid as indicated in the ANC booklet. Less than 20% of the women who attended antenatal care services were tested for HIV (Table 4.11)

Table 4.11: Antenatal care services received by respondents

Variable (Services received during antenatal care visits)	Frequency	Percentage
Checked blood pressure	199	90.5
Received abdominal examination	193	87.7
Listened to baby's heart beat	190	86.4
Asked about my medical history	127	57.7
Asked for urine sample	153	69.5
Took blood sample	148	67.3
Received Tetanus Toxoid (TT) injection	139	63.2
Received prophylactic malaria treatment drugs (i.e. IPT)	169	76.8
Received folic acid	149	67.7
Took HIV test	36	16.4
Discussed birth plan	95	43.2

Source; Field Survey (2014)

A comprehensive antenatal care package is essential in preparing women towards a safe delivery. The bivariate analysis of this package for women reveals that women who took HIV test during antenatal care were more likely to seek skilled attendant at the point of birth, χ^2 =9.1, p=0.011. In the same vain women who had a discussion about birth preparedness plans were significantly likely to deliver with skilled attendant, χ^2 =8.5, p=0.014. Other equally significant determinants of antenatal care services to delivering with skilled birth attendants were abdominal examination (χ^2=16.6, p=0.000), received TT injection (χ^2=6.8, p=0.033), listened to baby's heart beat (χ^2=8.8, p=0.012). However, weighing, checking the blood pressure, asking about their medical

history, receiving folic acid, taking blood sample, and taking of urine samples did not produce any significant difference in determining seeking for skilled birth attendant at the point of birth (Table 4.12).

Table 4.12: Bivariate analysis of antenatal care services received respondents and place of delivery

Variable: Services received during antenatal visits	N	Place of delivery			Test Statistic	
		Home with TBA	Home with health professional assistance	Health facility with health professional assistance		
		n (%)	n (%)	n (%)	χ^2	p-value
Weighed	214	149 (69.6)	7 (3.3)	58 (27.1)	2.587	0.271
Checked blood pressure	199	138 (69.3)	7 (3.5)	54 (27.1)	1.573	0.455
Received abdominal examination	193	145 (75.1)	5 (2.6)	43 (22.3)	16.554	0.000
Listened to baby's heart beat	190	127 (66.8)	7 (3.7)	56 (29.5)	8.798	0.012
Asked about my medical history	127	92 (72.4)	2 (1.6)	33 (26.0)	2.623	0.269
Asked for urine sample	153	101 (66.0)	5 (3.3)	47 (30.7)	5.033	0.081
Took blood sample	148	104 (70.3)	6 (4.6)	38 (25.7)	1.165	0.559
Received TT injection	139	91 (65.5)	7 (5.0)	41 (29.5)	6.817	0.033
Received prophylactic malaria treatment drugs (i.e. IPT)	169	119 (70.4)	2 (1.2)	48 (28.4)	10.3	0.006
Received folic acid	149	105 (70.5)	4 (2.7)	40 (26.8)	0.399	0.819
Took HIV test	36	22 (61.1)	4 (11.1)	10 (27.8)	9.072	0.011
Discussed birth plan	95	59 (62.1)	6 (6.3)	30 (31.6)	8.541	0.014

Source; Field Survey (2014)

When it comes to starting the attendance of ANC, the best predictor is the woman herself since in the bivariate analysis all the women who take the decision by themselves started antenatal in the first trimester of the pregnancy (which is the recommended period per WHO standards), χ^2=47.8, p=0.000 (Table 4.13). Thus the need for women to be empowered variously to be able to take such crucial decision since those women who start ANC early are more likely to attend

ANC frequently and consequently more likely to seek for skilled birth attendant at the point of birth, χ^2=24.4, p=0.000 (Table 4.13).

Table 4.13: Bivariate analysis of who decides when to start attending ANC and stage of pregnancy ANC was started.

Variable	N	Stage of pregnancy ANC visits started				Test statistic	
Who decides for you when to start attending ANC?		No ANC booklet	First trimester	Second trimester	Third trimester	χ^2	p-value
		n (%)	n (%)	n (%)	n (%)		
No one	93	54 (58.1)	17 (18.3)	15 (16.1)	7 (7.5)	47.773	0.000
Husband	78	31 (39.7)	36 (46.2)	11 (14.1)	0 (0.0)		
Mother in-law	17	8 (47.1)	5 (29.4)	2 (11.8)	2 (11.8)		
Father in-law	12	7 (58.1)	2 (16.7)	3 (25.0)	0 (0.0)		
Sister in-law	9	5 (55.6)	2 (22.2)	2 (22.2)	0 (0.0)		
Myself	11	0 (0.0)	11 (100)	0 (0.0)	0 (0.0)		
Total	220	105 (47.7)	73 (33.2)	33 (15.0)	9 (4.1)		

Source; Field Survey (2014)

Table 4.14: Bivariate analysis of number of antenatal visits and place of birth

Variable	N	Place of delivery			Test Statistic	
Number of antenatal visits		Home with TBA	Home with health professional's assistance	Health facility with health professional assistance	χ^2	p-value
		n (%)	n (%)	n (%)		
No ANC booklet	105	81 (77.1)	1 (1.0)	23 (21.9)	24.401	0.000
1-3 visits	38	34 (89.5)	0 (0.0)	4 (10.5)		
4 plus visits	77	40 (81.9)	6 (7.8)	31 (40.3)		

Total	220	155 (70.5)	7 (3.2)	58 (26.4)		

Source; Field Survey (2014)

The most talked about theme during discussions of birth preparedness was items needed for a safe delivery (n=143, 17.6%), and among the least discussed themes was transport arrangements when labor sets in (n=26, 3.2%).

4.3 Information, education and communication

Being able to identify danger signs at any point during the prenatal period is essential in achieving a successful outcome at birth. Therefore knowledge of women of reproductive age on danger signs of pregnancy was assessed and the results show that every woman could mention at least one danger sign of pregnancy. On average between 50-60% of the women could mention six signs of danger during pregnancy (Table 4.15).

Table 4.15: Multiple responses on birth preparedness and danger signs of pregnancy

Variable	Responses	
	N	Percent
Birth preparedness		
Making arrangements to deliver in a place where there is a skilled provider	108	13.3
Assist me in making arrangements on where to deliver	89	11.0
Discuss with me the available means of transport to the place of birth with my family and close relations including emergency situations	23	2.8
Discuss with me how decisions are made in the family i.e. .who usually makes decisions, and who else can make decisions if that person is not there?	26	3.2
Make arrangements to have adequate amounts of money as may be needed	86	10.6
Also ensure that I have an adequate insurance cover e.g. NHIS	117	14.4
Social support	19	2.3
Items Needed for a Clean and Safe Birth	143	17.6
Signs of Labour	104	12.8

Danger Signs in pregnancy	94	11.6
Others (specify) severe abdominal pain	2	0.2
Total	811	100.0
Danger signs of pregnancy		
Chills and fever	208	17.0
Sudden, very bad or continuous pain in the lower abdomen	197	16.1
Continuous vomiting, nausea, or diarrhea	103	8.4
Bleeding from the vagina	118	9.6
Blurred vision	87	7.1
Swelling feet, face, hands	140	11.4
Baby does not move for more than one day after the 20th week of the pregnancy	161	13.2
Baby moves less than ten times in two hours after the 28th week of pregnancy	115	9.4
Sores or blisters on the genitals	40	3.3
Sharp pain during urination	53	4.3
Sharp pain during urination	1	0.1
Total	1223	100.0

Source; Field Survey (2014)

The likelihood of women who were knowledgeable in signs of labor, and danger signs during pregnancy to deliver with a skilled provider was significant, p=0.000. Also those women who were discussed with about how decisions were made in their homes, and made transport arrangement had higher chances of seeking for skilled attendant at the point of birth, p=0.000 (Table 4.16)

Table 4.16: Bivariate analysis of birth preparedness plans and place of delivery

Variable:	**N**	**Place of delivery**			**Test Statistic**	
Knowledge of birth preparedness plans		Home with TBA n (%)	Home with health professional's assistance n (%)	Health facility with health professional assistance n (%)	χ^2	p-value
Making arrangements to deliver in a place where there is a skilled provider						
Yes	108	63 (58.3)	7 (6.5)	38 (35.2)	17.945	0.000

Assist me in making arrangements on where to deliver						
Yes	89	61 (68.5)	2 (2.2)	26 (29.2)	0.949	0.622
Discuss with me the available means of transport to the place of birth with my family and close relations including emergency situations						
Yes	23	8 (34.8)	6 (26.1)	9 (39.1)	48.579	0.000
Discuss with me how decisions are made in the family i.e. .who usually makes decisions, and who else can make decisions if that person is not there						
Yes	26	11 (42.3)	4 (15.4)	11 (42.3)	19.957	0.000
Make arrangements to have adequate amounts of money as may be needed						
Yes	86	52 (60.5)	6 (7.0)	28 (32.6)	10.446	0.005
Also ensure that I have an adequate insurance cover e.g. NHIS						
Yes	117	74 (63.2)	6 (5.1)	37 (31.6)	7.441	0.024
Social support						
Yes	19	17 (89.5)	0 (0.0)	2 (10.5)	3.708	0.157
Items Needed for a Clean and Safe Birth						
Yes	143	90 (62.9)	7 (4.9)	46 (32.2)	12.267	0.002
Signs of Labour						
Yes	104	60 (57.7)	7 (6.7)	37 (35.6)	18.718	0.000
Danger Signs in pregnancy						
Yes	95	51 (53.7)	5 (5.3)	39 (41.1)	22.635	0.000
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		

Source; Field Survey (2014)

The specific pregnancy danger signs with significant differences on place of delivery were; bleeding from the vagina (χ^2=13.6, p=0.001), blurred vision (χ^2=8.9, p=0.012), swelling feet, hands and face (χ^2=13.9, p=0.001), baby does not move for more than one day after the twentieth week of pregnancy (χ^2=23.8, p=0.000), baby moves less than ten times in two hours after the twentieth week of pregnancy (χ^2=30.2, p=0.000), and sore or blisters on genitals (χ^2=14.1, p=0.001). However, danger signs such as chills and fever, and continuous vomiting were not statistically significant on the place of delivery (Table 4.17).

Table 4.17: Bivariate analysis of knowledge on pregnancy danger signs and place of birth

Variable: Knowledge of danger signs during pregnancy	N	Place of delivery			Test Statistic	
		Home with TBA n (%)	Home with health professional's assistance n (%)	Health facility with health professional assistance n (%)	χ^2	p-value
Bleeding from the vagina						
Yes	102	83 (81.4)	0 (0.0)	19 (18.6)	13.585	0.001
Chills and fever						
Yes	208	146 (70.2)	7 (3.4)	55 (26.4)	0.45	0.799
Sudden, very bad or continuous pain in the lower abdomen						
Yes	23	15 (65.2)	1 (4.3)	7 (30.4)	0.371	0.831
Continuous vomiting, nausea, or diarrhea						
Yes	117	66 (64.1)	4 (3.9)	33 (32.0)	3.784	0.151
Blurred vision						
Yes	87	52 (59.8)	5 (5.7)	30 (34.5)	8.907	0.012
Swelling feet, face, hands						
Yes	140	87 (62.1)	7 (5.0)	46 (32.9)	13.933	0.001
Baby does not move for more than one day after the 20th week of the pregnancy						
Yes	161	126 (78.3)	1 (0.6)	34 (21.1)	23.830	0.000
Baby moves less than ten times in two hours after the 28th week of pregnancy						
Yes	115	99 (86.1)	0 (0.0)	16 (13.9)	30.192	0.000
Sores or blisters on the genitals						
Yes	40	19 (47.5)	1 (2.5)	20 (50.0)	14.088	0.001
Sharp pain during urination						
Yes	53	40 (75.5)	3 (7.5)	10 (18.9)	3.085	0.214

Source; Field Survey (2014)

4.4 Socio-cultural factors that affect skilled delivery

It has long been understood that health outcomes are profoundly shaped not just by biological factors but also by the social, and the cultural environment, including people's positions in various social hierarchies. Increasing evidence suggests that it is possible to improve health outcomes through action on these social determinants of health.

The characteristics of individual women like age, number of previous pregnancies, and education level play a role in determining whether they seek appropriate services, but the underlying factors influencing health behavior operate at inter-related levels of social influence: family and peers, the community in which women live and the health system available to them, and wider cultural norms.

It is therefore one of the focus areas of this research to unearth the socio-cultural factors that influence health behavior in the Mamprugu Moagduri district.

A portion of women of reproductive age go through some traditional rites before such women can start accessing antenatal care services (n=23, 17.3%), and of these women who go through the practice, not until the traditional rites are over such women do not get ANC services. This can take a minimum period of less than a month up to more than four months.

Upon safe delivery by a woman, she undergoes some traditional rites including blowing of ashes (41.8%), and drinking and bathing of prepared herbs (30.5%). The baby equally has to be fortified with some traditional concoctions against evil spirits. These include the use of local herbs to draw on the ground and place the child on the drawing and some put in the child's mouth (n=84, 38.2%), and bathing the baby in a river (n=35, 15.9%).

Traditionally the placenta of a woman after birth is given special treatment and in some instances the placenta goes through a "burial rite". Traditional birth attendants are largely those regarded as being qualified to handle the placenta immediately after birth (n=120, 54.5%), and husbands are also qualified to handle the placenta after birth (n=83, 37.7%). But in terms of burying the placenta, husbands are largely responsible (n=125, 56.8%).

All the respondents (100%) were emphatic with the fact that the placenta must necessarily be buried at a certain place if indeed one wishes to bring forth more children. Dominant among the places of burying the placenta were the rubbish/refuse dump (n=106, 48.2%), and the traditional birth attendant's house (n=64, 29.1%) (Table 4.18)

Table 4.18. Socio-cultural practices and perceptions on maternal health

Variable	Frequency	Percent
Traditional rites performed before the start of ANC	38	17.3
Duration of traditional		
Nothing is done	182	82.7
Less than one month	5	2.3
Between one to three months	19	8.6
Four months plus	14	6.4
Total	220	100.0
Traditional rites performed on a woman after a safe delivery		
Nothing was done	39	17.7
Blowing of ashes to the fore fathers	92	41.8
Drinking and bathing herbs	67	30.5
A cross mark on the door of the woman	22	10.0
Total	220	100.0
Traditional rites performed on a baby after a safe delivery		
Nothing	60	27.3
Using local herbs to draw on the ground and place the child on the drawing and some are put in the child's mouth	84	38.2
Bathing the baby in a river	35	15.9
Marking of a cross-like symbol on the baby	28	12.7
Marking on the door where baby sleeps	13	5.9
Total	220	100.0
Traditionally who is qualified to handle your placenta		
TBA	120	54.5
Any Woman from the family	17	7.7
Husband	83	37.7
Total	220	100.0
Qualified person to bury placenta after delivery		

Husband or any other male from husband family	125	56.8
TBA	62	28.2
Any family member	12	5.5
Father-in-law	21	9.5
Total	220	100.0
Burial place of the placenta		
Rubbish/Refuse dump	106	48.2
In front of the house	33	15.0
At the hospital	17	7.7
Traditional Birth Attendant house	64	29.1
Total	220	100.0

Source; Field Survey (2014)

A bivariate analysis revealed that place for burying the placenta had statistically significant influence on place of delivery (χ^2=38.3, p=0.000). The person who is suppose to handle the placenta before it is buried also produced statistical significance on place of delivery (χ^2=36.0, p=0.000). Again the person qualified to bury the placenta yielded significant difference on place of delivery (χ^2=28.6, p=0.000). It is very clear now that these social and cultural dynamics of people about what they hold in high esteem be understood well since these dynamics have consequences (positive and negative) on health outcomes due to the fact that the dynamics contribute to health behavior (Table 4.19).

Table 4.19: Bivariate analysis of traditional practices and place of delivery

Variable	N	Place of delivery			Test Statistic	
		Home with TBA	Home with health professional's assistance	Health facility with health professional assistance	χ^2	p-value
Traditionally what must be done immediately to the baby after a safe delivery?						
Nothing is done	60	42 (70.0)	2 (3.3)	16 (26.7)	15.171	0.056
Using local herbs to draw on the ground and place the child on the drawing and some are put in the child's mouth	84	61 (72.6)	4 (4.8)	19 (22.6)		
Bathing the baby in a river	35	23 (65.7)	0 (0.0)	12 (34.3)		

Marking of a cross-like symbol on the baby	28	24 (85.7)	1 (3.6)	3 (10.7)		
Marking on the door where baby sleeps	13	5 (38.5)	0 (0.0)	8 (61.5)		
Total	220	155 (70.5)	7 (32.)	58 (26.4)		
Traditionally what must be done immediately to the mother after a safe delivery						
					6.574	0.362
Nothing was done	39	25 (64.1)	1 (2.6)	16 (33.3)		
Blowing of ashes to the fore fathers	92	68 (73.9)	4 (4.3)	20 (21.7)		
Drinking and bathing herbs	67	43 (64.2)	2 (3.0)	22 (32.8)		
A cross mark on the door of the woman	22	19 (86.4)	0 (0.0)	3 (13.6)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		
Traditionally who is supposed to handle your placenta after birth?						
					36.036	0.000
TBA	120	103 (85.8)	0 (0.0)	17 (14.2)		
Any Woman from the family	17	11 (64.7)	0 (0.0)	6 (35.6)		
Husband	83	41 (49.4)	7 (8.4)	35 (42.2)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		
Who qualifies to bury your placenta after delivery?						
Husband or any other male from husbands family	125	87 (69.6)	7 (5.6)	31 (24.8)	28.586	0.000
TBA	62	54 (87.1)	0 (0.0)	8 (12.9)		
Any family member	12	6 (50.0)	0 (0.0)	6 (50.0)		
Father-in-law	21	8 (38.1)	0 (0.0)	13 (61.9)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		
Where the placenta must necessarily be buried						
					38.286	0.000
Rubbish/Refuse dump	106	85 (80.2)	0 (0.0)	21 (19.8)		
In front of house	33	21 (63.6)	6 (18.2)	6 (18.2)		
At the hospital	17	9 (52.9)	0 (0.0)	8 (47.1)		
Traditional Birth Attendant house	64	40 (62.5)	1 (1.6)	23 (35.8)		
Total	220	155 (70.5)	7 (3.2)	58 (26.4)		

Source; Field Survey (2014)

4.5 Logistic Regression

Logistic regression analysis was carried by taking the outcome variable (skilled birth attendant), with key explanatory variables against the outcome variable to estimate the effect on the outcome variable.

The odds of using skilled birth attendant did not differ significantly among any of the demographic features of respondents (Table 4.20).

Those women who received abdominal examination had a 0.1 odds of using a skilled birth attendant (AOR=0.098, 95% CI [0.029, 0.335]) than those who did not receive abdominal examination. Women whose babies' heart beat was listened to were 5.6 times likely to use skilled birth attendant (AOR=5.591, 95%CI [1.125, 27.801]) as compared to women who did not receive this service during antenatal visits (Table 4.20).

Of the numerous themes for discussion during birth preparedness plans, making arrangements to deliver in a place where there is a skilled provider was significantly associated with using skilled birth attendant (AOR=3.0, 95% CI [1.076, 8.637]) as against the respondents who were not discussed with on the same subject matter. Similarly on birth preparedness plans, those women who were aware of danger signs during pregnancy had a 3.1 odds of using skilled birth attendant (AOR=3.075, 95% CI[1.082, 8.743]) than their counterparts who did not receive such education (Table 4.20).

The specific danger signs during pregnancy with significant odds on the use skilled birth attendant were; baby does not move for more than one day after the 20th week of the pregnancy (AOR=0.408, 95% CI [0.175, 0.956]), and baby moves less than ten times in two hours after the 28th week of pregnancy (AOR=0.425, 95% CI [0.182, 0.994]) as presented in table 4.20.

Table 4.20: Logistic regression results with AOR and 95% CI for the use of skilled birth attendants by women of reproductive age in Mamprugu Moagduri District 2014.

Variable	Sig. (p-value)	Adjusted Odd Ratio Exp (B)	95% CI for Exp (B)	
			Lower	Upper
Demographic feature				
Age	0.945	0.992	0.796	0.238
Educational status	0.561	1.195	0.655	2.181
Marital status	0.849	0.843	0.146	4.868
Occupation	0.915	1.019	0.723	1.437
Services received during antenatal care visits				
Received abdominal examination	0.000	0.098	0.029	0.335
Listened to baby's heart beat	0.035	5.591	1.125	27.801
Birth preparedness plan discussed				
Making arrangements to deliver in a place where there is a skilled provider	0.036	3.048	1.076	8.637
Danger Signs in pregnancy	0.035	3.075	1.082	8.743
Danger signs during pregnancy				
Baby does not move for more than one day after the 20th week of the pregnancy	0.039	0.408	0.175	0.956
Baby moves less than ten times in two hours after the 28th week of pregnancy	0.049	0.425	0.182	0.994
Main health and nutrition education services you receive during antenatal visits				
Family planning	0.014	2.701	1.226	5.951
Danger signs of child birth (labor signs)				
Severe vaginal bleeding	0.034	2.399	1.066	5.397
Prolonged (>12 hours) labor	0.000	0.258	0.124	0.537
Danger signs after child birth (postpartum danger signs)				
Bad smelling vaginal discharge	0.025	2.110	1.099	4.051
Painful urination	0.014	2.286	1.181	4.427
Traditional handling of the placenta	0.000	2.238	1.572	3.185
Choosing a place for expectant mother to deliver	0.000	0.170	0.076	0.379

Source; Field Survey (2014)

Logistic regression of the danger signs of labor pointed to some specific danger signs of labor with significance on the use of skill birth attendant during delivery; women who were aware of

severe vaginal bleeding as a danger sign of labor were 2.4 times likely to use skilled birth attendant (AOR=2.399, 95% CI[1.066, 5.397]) than those who were not aware. Also women who knew that prolonged labor (i.e. labor for more than 12 hours) was a danger sign of labor had a 0.3 odds of seeking for skilled birth attendant (AOR=0.258, 95% CI [0.124, 0.537]) as compared to those of their colleagues who did not know (Table 4.20).

There was significant difference between women of reproductive age who were knowledgeable on postpartum danger signs and those who were not knowledgeable. The specific postpartum danger signs that were significant on usage of skilled birth attendant were; bad smelling vaginal discharge (AOR=2.110, 95% CI [1.099, 4.051]), which implies women with knowledge on bad smelling vaginal discharge as a postpartum danger sign were 2.1 times more likely to use skilled birth attendant at birth as compared to their counterparts. Also those who were aware of painful urination after birth as a danger sign had a 2.3 odds to deliver with skilled birth attendant (AOR=2.286, 95% CI [1.181, 4.427]) than those who do not know (Table 4.20).

Traditionally, the person qualified to handle the placenta after birth before burial of the placenta is done had negatively significant difference towards seeking for unskilled birth attendants. Respondents who believed that a particular person must handle the placenta before it is buried had a significant odds of 2.2 times to use unskilled birth attendant (AOR=2.238, 95% CI [1.572, 3.185]) than those who believed that any person can handle the placenta (Table 4.20).

Decision making including the choice of a place for delivery for expectant mothers was statistically significant in favor of seeking for unskilled birth attendants (AOR=0.170, 95% CI [0.076, 0.379]).

4.6 Results of focused group discussion

Where do women deliver in these communities?

In a simple way (yes by raising a hand) of ascertaining the place of delivery of women from the men group in all the focused group discussions, majority of the participants (n=28, 70.0%) said most pregnant women deliver at home with the help of traditional birth attendants with several reasons;

> *"Some of the women do not attend ANC, so at the time of birth they try to avoid being shouted at by nurses" (Kubore)*
>
> *"The behavior of health staff towards some women at the point of birth is humiliating; how can I be in pain and be treated like it is my fault? (a 29 year old pupil teacher At Soo shared his experience)"*
>
> *"Even though I am not a woman, but I felt the pain when my wife was in labor. Some of us are made to understand that the health center offers some relief in those times. But when my wife was to give birth and I took him to the Kubore health center, I regretted for doing so. We got there very late in the night because the labor started that night. When the midwife was called upon, what she could say was that where were we all day long with her and now that we have realize that it is becoming difficult we are bringing her to the health center to spoil her (the midwife's) records?. I tried explaining to the midwife that the labor started that night but she would not just understand"*

The health staff are very quick to jump into conclusion that we those living in the village are the same in our attitudes. So do you think if I share this experience with my peers at the village they will go there for delivery services? He quizzed rhetorically.

Other reasons given by the men's groups included;

Some of the women fear injections and the TBAs do not give injections

Most of the time the labor starts late in the night and the means of transport to carry the labor woman to the health center is not available

The health staff too are not many

"The TBA in this community is very competent and everyone is confident in him. The health center in this community is very small, the rooms there are very few and even wound dressing is done in the open but birth cannot be done in the open. At the TBA's house, he has a room purposely for deliveries" (an opinion leader in Yagba community)

"Though we have a good structure provided by SADA/MVP with health staff, but the one to conduct the delivery (the midwife) likes travelling too much. She goes for every weekend and comes very late to work on Monday. As we all know, the baby does not announce the day it will come, and when it happens within the period the midwife is not around and we the community members talk then it is a problem. So the general assumption is that when a woman is in labor during the weekends, alternatives are sought other than going to the Kunkua health center" (an aggrieved 34 year old pastor in Kunkua)

Do men take part in preparing women for delivery?

Most of the men (n=39, 95.1%) in the focused group discussions in all the communities responded positively that they take part in preparing women during pregnancy for delivery. Only a few (n=2, 4.9%) disagreed to men taking part in helping women to deliver.

Even though majority of the men in the focused group discussion agreed entirely with taking part in preparing women for delivery, providing the women with items needed for safe and clean delivery came out clearly.

> *"when a woman is pregnant the only thing a man can do is to provide her with some items for the delivery. Apart from that the rest are women's affair" (an opinion leader in Yagba).*

This statement reveals two interesting dimensions; it contradicts the assertion that men take part in preparing pregnant women for delivery, and perhaps reveals the ignorance about the concept of birth preparedness of men in the study communities when it comes to the whole birth preparedness plan as a package, thus the need for an intervention to target men to take part in discussions during pregnancy towards a safe delivery.

Though men were less engaged in the birth preparedness plan of women during pregnancy, they were much concerned about helping pregnant women in domestic activities. Dominant among the kind of support men give to women during pregnancy are the following;

Maternal nutrition;

"women at that stage need very good food so that both the baby and the mother will grow well" (a community leader opined)

Fetch water and firewood for the woman

"those days we used to think that women need to work vigorously even during pregnancy. But we have been made to think otherwise and I think it is really helping"

With the above assertion, if men are really involved in discussions about issues pertaining to maternal and child health, more gains can be made.

What is traditionally done at home before a pregnant woman can start attending ANC?

Traditionally we the household heads perform various forms of rites before the status of the woman can be declared as pregnant. These rites start at different times and hence end at different stages of the pregnancy. The following are the main traditional practices that women go through before they can start antenatal care services;

for primates they have to be treated traditionally and observed for three months before the pregnancy can be publicly announced

for women who have given birth before, nothing is done

a mallam has to write some Islamic words on a wooden plate. These words are washed with water and given to the woman to drink to protect the both mother and baby. This exercise takes about five days, after which the woman can start attending ANC services

when signs of pregnancy are noticed in a primate, an old man gets up early one morning before 4:00am. He goes to stand at the window of the pregnant woman and calls her name. The woman responds and stays inside till day breaks. Her hair is shoved by that man and a guinea fowl slaughtered for her to prepare food for the man who performed this rite. All the meat is given to this man (a 45 year old man attested in Kunkua). Not until this rite is performed the woman cannot do what pregnant women do or carry herself as pregnant

On danger signs of pregnancy, men have a fair idea about the danger signs.

As one of the participants in Yagba said "when you have a pregnant woman in your house, you the husband has to watch her carefully so that any change that is realized care can be sought"

The danger signs that dominated the discussions were; chills and fever, continuous vomiting, nausea, or diarrhea, blurred vision, swelling feet, face, hands, and general body weakness.

Men had good knowledge on the benefits of attending antenatal care services, and these were their responses;

The women get medicines related to the pregnancy

If the baby is not lying well, it can be placed well

The women are also taught on how to take good care of the new born and how to feed the baby well

The ANC also enhances safe delivery

The women get mosquito nets for the household

"The mother is thoroughly checked and if there is something wrong with her the nurses would help by giving her medicine" (assembly man for Loagri)

The men's groups also knew some benefits of health facility delivery. The benefits according to them include;

Good care is given to both mother and baby

Emergencies such as blood transfusion can only be resolved in the health facility

The correct records especially the date of birth of the child is known

When a woman goes to the facility to deliver and there is any difficulty, the woman is timely referred to the next level

On the contrary, a man in Yagba lamented with this statement

"In this community it is only the ANC services we benefit, for delivery there is no even a midwife in the clinic to conduct deliveries. Even though we know the benefits associated with delivering at the facility, we do not have that service here (a 38 year old husband lamented, Yagba). The ambulance that was donated by the member of parliament for the area can hardly even reach the nearest town where there is a hospital (Fumbisi hospital) in times of emergencies because the road is not good. So the TBA is largely the only option we have, the nurses even refer some pregnant women to him, but his house is very dirty"

The placenta and how it is handled

Traditionally the placenta of a woman is not supposed to be handled by some people as it is believed that the chances of a next birth depends on how, and who handles the placenta. Hence largely, the father of the baby or in the absence of the father any other relative as chosen by the father handles the placenta after delivery.

The placenta must necessarily be buried at a place where fire does not easily burn or does not burn at all. The refuse damp or at the back of the house (behind the window of the woman's room) are the recommended places for burying the placenta.

The burial rite for the placenta has certain basic similarities though with little differences in procedure. The sex of the baby also determines the number of people who should bury the placenta. The rite takes this form;

Burial rite for the placenta

If the baby is a male/boy; one man digs the hole and two women carries the placenta to the place where the placenta is to be buried in clay pot.

If the baby is a female/girl; one man digs the hole and three women carries the placenta to the place where the placenta is to be buried.

In both instances, the man collects the pot with the placenta for burial.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

After the launch of the Safe Motherhood Initiative in Nairobi, Kenya in 1987, the Inter-Agency Group for Safe Motherhood established an action agendum in 1997 for reducing maternal mortality. The agendum concluded that "the single most critical intervention for safe motherhood is to ensure that a health worker with midwifery skills is present at every birth".

To be in sync with this agendum, the Government of Ghana introduced a policy in the year 2008, exempting women attending public and private health facilities from paying user fees for delivery care services aimed at improving levels of skilled attendance at birth.

Though ensuring a skilled health professional at delivery for all is core to reducing maternal morbidity and mortality, nevertheless, the route to achieving this ought to embrace the complex range of issues that impact on health provider education, health system organization and functioning, human resource management as well as the social, cultural, political and economic environments that impact on women's access to health care. Hence an understanding of how these factors interact is important in order that interventions targeted at improving women's access to health care and for that matter access to skilled birth attendant at birth are responsive to the real challenges of access to health.

5.1 Demographic factors and skilled birth attendance

A total of 220 women of reproductive age were included in the survey. More than a third (35.0%) of the women were in their late twenties. The mean, minimum, and maximum ages of the respondents were 29.06, 17, and 47 years respectively. More than three quarters (82.7%) of the women did not have any form of formal education and just a small proportion (17.3%) had basic education. None of the women surveyed had any form of Secondary education. The resultant effect of this large proportion of women not been educated formally was that these women did not have the impact of education on the use of maternal health service. It is therefore consistent with aspect of the this survey that the utilization of maternal health services such as early and regular antenatal visits, delivering in the health facility, and the presence of skilled birth attendant at birth were low among women of reproductive age in the study area. Various research findings have demonstrated the impact of formal education on women's ability to utilize health care services. According to (Yared et al., 2002; Amankwa, 2008; and Sabine et al., 2009) maternal formal education was positively associated with the utilization of maternal care services. Again Patience et al. (2013) in their studies found that a mother's level of education has an important impact on the use of maternal health services, and hence concluded that improving the educational opportunity for women may have a large impact on improving the use of such services (Patience et al., 2013).

Sabine et al. (2009) are of the view that the utilization of maternal care services is higher in women of higher socioeconomic groups than women in the lower socioeconomic groups. The predominant occupation of the women studied was peasant farming (64.1%). One of the critical indicators of utilization of maternal health service which is the proportion of births attended to by skilled personnel was found to be very low (29.5%) among the women who were

predominantly peasant farmers in the study area. This is consistent with Sabine et al. (2009) view that women in low socioeconomic groups use maternal health services less frequently. Yvonne (2010) found similar results in her study where farmers and manual workers were more likely to deliver at home than women working in professional, technical and management areas as well as those in clerical or sales domains.

Though religion, marital status, and occupational status did not have statistically significant differences on place of delivery, but in terms of proportions more Christians (46.2%), and seamstresses (57.1%) tend to deliver with skill attendant.

The probability of Christian women to start early antenatal care visits was higher than the other religious denominations, $p<0.05$. All the women of the Traditional African religion started antenatal care visits late probably due to the traditional rites pregnant women of this religious denomination go through before they can start attending antenatal visits. In terms of occupation of the women surveyed, the probability of a farmer, trader, hairdresser, and a seamstress to start attending antenatal visits early was statistically significant, $p<0.05$. However, housewives are interestingly likely to start antenatal visits late. Educational level, and marital status did not produce any statistically significant difference

Apart from religion where Christians were more probable than Moslems and Traditionalists ($p<0.01$) to attend antenatal care four or more times; educational level, and occupation did not yield statistical significance. This is partly in line with results from Patience et al. (2013) which indicated that Christian women showed high tendency of using all forms of maternal healthcare services than those with no religious background.

The probability of a married women to be knowledgeable of danger signs of pregnancy was significant, $p<0.05$. Housewives, seamstresses, and hairdressers were more probable , $p<0.05$ to be knowledgeable in danger signs after birth than farmers and traders. The probability of a married women to be knowledgeable of danger signs of pregnancy was significant, $p<0.05$. This is attributable to the fact that close to one-third (63.6%) of married women start antenatal care visits early (that is starting antenatal care visits in the first trimester of pregnancy) thus exposure to key health messages at the health facilities throughout the prenatal period makes them more likely to be knowledgeable in danger signs of pregnancy. This is consistent with findings from Yalem (2010) studies which pointed out that married women were more likely to received antenatal care services than single mothers. This could be due to fear of stigma because a pregnancy without marriage is not accepted in most rural communities in Africa and most parts of the world. Moreover, these un-married mothers may want to hide their pregnancy from their parents and the community instead of receiving antenatal care services (Yalem, 2010).

5.2 Place of delivery among women of reproductive age (WORA)

The national skilled delivery rate was 54.7% in the year 2013 and that for the Northern region in the same year was 46.8% (GHS-RCH report, 2013). The proportion of women who delivered with a skilled attendant in the Mamprugu Moagduri district according to the survey was 29.5%. That is percentage points difference of 17.3 and 25.2 from the regional and national coverage respectively. The WHO (2008) is of the position that any country where skilled delivery is higher than 80%, maternal deaths are less than 100, thus the need to think outside the box for something extra ordinary to be done considering the huge disparities at all levels.

Dominant among the reasons for this huge disparities included far distances between houses and health facilities, the availability and accessibility of traditional birth attendants in the communities, and easy/sudden birth among others. This is consistent with a study in Kenya by Alexandra (2010) where 58.5% of women noted that the decision of where to give birth was based on the existence or lack of “problems” before or during delivery. Homebirth was overwhelmingly the preferred option when difficulties did not occur to impede a safe delivery.

Decision making at the household level plays an important part in the eventual place of delivery for women. The research reveals a significant association between husbands' decision and place of delivery (p=0.004). Magoma et al. (2010) found that all key informants, TBAs and elders interviewed explained that decision on place of delivery depends primarily on family (especially the husband’s) preferences. Magoma et al. (2010) and Alexandra. (2010) concluded that planning in advance for delivery is not part of traditional practice in some communities where home delivery is the norm. Therefore health service providers for maternal health services at all levels in the district need to take advantage of "men as partners" intervention to really let men take decisions in favor of seeking for a skilled birth attendant.

5. 3 Antenatal care services and skilled birth attendance

Antenatal care is widely understood to have beneficial impact on pregnancy and birth outcomes through early diagnosis and treatment of complications as well as promoting the health of the pregnant woman through health information, education and communication (IE&C). The World Health Organization (WHO, 2010) recommends four times (regarded as adequate) antenatal visits at least for every pregnant woman.

Nationally, Ghana's four plus antenatal visit coverage in the year 2013 was 54.7% while that of the Northern region recorded 57.1% the same year (GHS-RCH, 2013). The region thus recorded a 2.4% point higher than the national coverage. However, according to the research findings, a little over one-third (35.0%) of the women surveyed adequately attended the recommended number of times (4 or more visits) of antenatal care visits, a 22.1% point difference lower from the regional coverage. The overall antenatal coverage in terms attendance of at least once was 52.3% in the district. This however did not translate into a corresponding high coverage in skill delivery which was 29.5%. This is similar to Amankwa (2008) findings in Tanzania, where more than 90% of all pregnant women who attended antenatal care at least once and approximately 62% made four times or more visits, less than five in ten receive skilled delivery care at available health units.

Again only a third of the women started accessing antenatal care services in the first trimester of pregnancy (attending antenatal care in the first trimester of pregnancy is the recommended period by WHO) partly due to the fact that women's autonomy in decision making including issues of their own sexual reproduction is limited. This implies that more than 60. % of pregnant women missed the opportunity of getting the full complement of services rendered during antenatal sessions. In his studies, Yalem (2010) found that most men agreed that they were entitled to take decisions about the health of their wives including when their wives should begin antenatal care visits. They believed that it was right and correct for a husband to decide for his wife. “Being the head of the family, we husbands have responsibility for making the decision on family matters including health" (Yalem, 2010).

Of the services received during antenatal visits, most women were weighed (97.3%), and the least received service was HIV testing.

As indicated earlier, a comprehensive antenatal care package is essential in preparing women towards a safe delivery. The bivariate analysis of this package for women reveals that women who took HIV test during antenatal care were more likely to seek skilled attendant at the point of birth, χ^2 =9.1, p=0.011. This is consistent with findings from Yvonne (2010) that women who had HIV test during ANC were less likely to deliver at home compared to those who did not (p<0.01).

5.4 Information, education and communication and skilled birth attendance

According to this research, women who had a discussion about birth preparedness plans were significantly likely to deliver with skilled attendant, χ^2 =8.5, p=0.014. A discussion paper by UNDP in the year 2011 on the social determinant to maternal health shows that a birth preparedness plan program in Cambodia encouraged village leaders, local midwives, and community volunteers to raise birth preparedness awareness at meetings and group events led to an increase in antenatal care by 22%, delivery in the presence of a midwife by 33% and hospital referral by 281% over one year period. Similarly, Lerberg et al. (2014) are of the view that birth preparedness and complication readiness (BP/CR) strategy aims at increasing both the effectiveness and timely use of key services for mothers and newborns, particularly during childbirth with the assumption that it leads to a reduction in two of the three the delays; 1) delay to decide to seek care, and 2) delay to reach the health facility.

Other equally significant determinants of antenatal care services to delivering with skilled birth attendants according to this research were abdominal examination (χ^2=16.6, p=0.000), received tetanus toxoid injection (χ^2=6.8, p=0.033), listened to baby's heart beat (χ^2=8.8, p=0.012).

However, weighing, checking the blood pressure, asking about their medical history, receiving folic acid, taking blood sample, and taking of urine samples did not produce any significant difference in determining seeking for skilled birth attendant at the point of birth

Women who started antenatal care visits early are more likely to attend antenatal visits frequently (to meet the recommended number of times i.e. 4 plus visits) and consequently more likely to seek for skilled birth attendant at the point of birth, χ^2=24.4, p=0.000. This is consistent with studies of Bloom et al. (2001) where 300 women from low- and middle-income families in urban India showed that those who received a relatively high level of antenatal care were four times more likely than those who had little or no antenatal care to deliver with a skilled attendant.

The likelihood of women who were knowledgeable in signs of labor, and danger signs during pregnancy to deliver with a skilled provider was significant, p=0.000. Also those women who were discussed with about how decisions were made in their homes, and made transport arrangement had higher chances of seeking for skilled attendant at the point of birth, p=0.000.

Logistic regression of the danger signs of labor pointed to some specific danger signs of labor with significance on the use of skill birth attendant during delivery; women who were aware of severe vaginal bleeding as a danger sign of labor were 2.4 times likely to use skilled birth attendant (AOR=2.399, 95% CI[1.066, 5.397]) than those who were not aware. Also women who knew that prolonged labor (i.e. labor for more than 12 hours) was a danger sign of labor had a 0.3 odds of seeking for skilled birth attendant (AOR=0.258, 95% CI [0.124, 0.537]) as compared to those of their colleagues who did not know. This is consistent with findings from Nepal (Choulagai et al., 2013) where women who knew at least one danger sign of pregnancy and

delivery were 1.3 times more likely to use skilled birth attendance services at delivery (OR =1.31, 95% CI: 1.081.58).

Studies of Neelanjana (2012) in the Gambia, revealed that failure on the part of most women who attended ANC to obtain skilled attendance at birth was associated with the low levels of antenatal education on danger signs and complication readiness during pregnancy. Adequate prenatal counseling at the antenatal care improves proportion of skilled attendance at delivery.

There was significant difference between women of reproductive age who were knowledgeable on postpartum danger signs and those who were not knowledgeable. The specific postpartum danger signs that were significant on usage of skilled birth attendant were; bad smelling vaginal discharge (AOR=2.110, 95% CI [1.099, 4.051]), which implies women with knowledge on bad smelling vaginal discharge as a postpartum danger sign were 2.1 times more likely to use skilled birth attendant at birth as compared to their counterparts who were not aware. Also those who were aware of painful urination after birth as a danger sign had a 2.3 odds to deliver with skilled birth attendant (AOR=2.286, 95% CI [1.181, 4.427]) than those who do not know.

Findings from Jerome et al., 2011 revealed similar association between knowledge of key danger signs during pregnancy or during the postpartum period among women in rural areas of Mbarara district, Uganda. The association between knowledge of at least one key danger sign during pregnancy (OR=1.8, 95% CI: 1.2-2.6), knowledge of at least one key danger sign during postpartum (OR=1.9, 95% CI: 1.2-3.0) remained statistically significant even after adjusting for age, education and household assets ownership as potential confounders.

5.5 Socio-cultural factors that affect skilled delivery

A woman's chance of dying or becoming disabled during pregnancy and childbirth is closely connected to her social and economic status, the norms and values of her culture. The poorer and more marginalized a woman is, the greater her risk of death. In fact, maternal mortality rates reflect disparities between wealthy and poor countries more than any other measure of health (UNFPA, 2012).

The characteristics of individual women like age, number of previous pregnancies, and education level play a role in determining whether they seek appropriate services, but the underlying factors influencing health behavior operate at inter-related levels of social influence: family and peers, the community in which women live and the health system available to them, and wider cultural norms.

High maternal mortality rates are an indication not only of poorly functioning health systems, but also of deep-seated gender inequalities that leave women with limited control over decision-making and that restrict their access to social support, economic opportunities and health care (UNFPA, 2012; WHO, 2006).

According to the research some proportion of women of reproductive age go through some traditional rites before such women can start accessing antenatal care services (17.3%), and of these women who go through the practice, not until the traditional rites are over such women do not start antenatal care visits. This can take a minimum period of less than a month up to more than four months.

The use of modern health services in such a context is often influenced by individual/household/community perceptions of the efficacy of modern health services and the

cultural beliefs of individual women. Upon safe delivery by a woman, she undergoes some traditional rites including blowing of ashes (41.8%), and drinking and bathing of prepared herbs (30.5%). The baby equally has to be fortified with some traditional concoctions against evil spirits. These include the use of local herbs to draw on the ground and place the child on the drawing and some of the herbs put in the child's mouth (38.2%), and bathing the baby in a river (15.9%). According to Gwamaka (2012) in many cases, the medical 'culture' may clash with the woman's culture. In the northern part of Tanzania traditional births attendants are the ones who determine the place of delivery among Masai tribe and they also arrange for the kind of diet required by the women after deliver. Findings from the same study revealed that labor is kept secret because any complication that develops means the women is adulterous and remedy for that is to mention the names of all the men who slept with her.

Traditionally the placenta of a woman after birth is given special treatment and in some instances the placenta goes through a "burial rite". Apart from husbands, Traditional birth attendants are largely those regarded as being qualified to handle the placenta immediately after birth (54.5%). But in terms of burying the placenta, husbands are largely responsible (56.8%).

All the respondents 100% were emphatic that the placenta must necessarily be buried at a certain place if indeed one wish to bring forth more children. Dominant among the places of burying the placenta were the rubbish/refuse dump (48.2%), and the traditional birth attendant's house (29.1%). This is consistent with studies in Zambia which reveals that the placenta must be buried in a certain manner for a woman to continue bearing children, this is contrarily to medical knowledge

A bivariate analysis reveals that place for burying the placenta had statistically significant influence on place of delivery (χ^2=38.3, p=0.000). The person who is supposed to handle the placenta before it is buried also produced statistical significance on place of delivery (χ^2=36.0, p=0.000). Again the person qualified to bury the placenta yielded significant difference on place of delivery (χ^2=28.6, p=0.000). It is therefore clear that these social and cultural dynamics of people about what they hold in high esteem be understood well since these dynamics have consequences (positive and negative) on health outcomes due to the fact that the dynamics contribute to health behavior.

Traditionally, the person qualified to handle the placenta after birth before burial of the placenta is done had significant difference towards seeking for unskilled birth attendants. Respondents who believed that a particular person must handle the placenta before it is buried had a significant odds of 2.2 times to use unskilled birth attendant (AOR=2.238, 95% CI [1.572, 3.185]) than those who believed that any person can handle the placenta.

Decision making including the choice of a place for delivery for expectant mothers was statistically significant in favor of seeking for unskilled birth attendants (AOR=0.170, 95% CI [0.076, 0.379]). The lack of autonomy for women was one of the barriers to skilled attendance identified in a study by Reuben et al. (2013) in the Ga East Municipality associated with the utilization of skilled delivery services. Most cultures especially in Africa maintains that women must wait for approval from male relatives before seeking health help (Yared et al., 2002; WHO, 2007; Baral et al., 2010).

Even though majority of the men in the focused group discussion agreed entirely with taking part in preparing women for delivery, providing the women with items needed for safe and clean

delivery came out clearly. But a statement from one of the discussants contradicts the earlier assertion *"when a woman is pregnant the only thing a man can do is to provide her with some items for the delivery. Apart from that the rest are women's affair" (Mba Moro, an opinion leader in Yagba).*

This statement reveals two interesting dimensions; it contradicts the assertion that men take part in preparing pregnant women for delivery, and perhaps reveals the ignorance about the concept of birth preparedness among men in the study communities when it comes to the whole birth preparedness plan as a package, thus the need for an intervention to target men to take part in discussions during pregnancy towards a safe delivery.

A study in Kenya by Alexandra (2010) for instance found that in Swahili culture it is considered bad luck to prepare for a baby before its birth. Too much preparation, they claimed, could result in a complication such as a stillbirth. It was also found that to guess the sex of the child or to give a gift is considered to be equally harmful. The highest level of preparation described by women who chose even homebirth was the purchase of birthing supplies, such as a razor to cut the umbilical cord, a few weeks before delivery.

On maternal nutrition and general wellbeing of the pregnant woman, men in the study area do have a good idea as to what needs to be done. Responses such as:

> *"women at that stage need very good food so that both the baby and the mother will grow well" (a community leader opined)*
>
> *"those days we used to think that women need to work vigorously even during pregnancy. But we have been made to think otherwise and I think it is really helping" (opinion leader in Loagri shared his thought with his colleagues)*

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Various factors accounted for the low skilled birth coverage of 29.5% in the district, which is far below both regional and national coverage of 46.8% and 54.7% respectively.

Inadequate birth preparedness among women of reproductive age led to the low skilled birth coverage in the district.

Women who took decisions for themselves as to where to deliver largely favored health facility delivery.

Among women who accessed antenatal care services and took HIV test, most of these women delivered at the health facility. Also women whose abdomens were examined during antenatal care services had a higher likelihood of giving birth at the health facility.

Women who were aware of danger signs during pregnancy had a higher likelihood of delivering at the health facility.

Traditional rites performed on pregnant women were one major factor that delays the start of antenatal visits. These rites took as long as four months for some of the women. Other traditional rites performed on babies and mothers alike shortly after delivery made home deliveries to be preferred than health facility delivery. Significant influential cultural practices that favored home delivery were how and who should handle the placenta if indeed the women has intentions of bearing more children. Equally important was the traditionally suitable place of burial for the

placenta. The suitable place of burying the placenta did not favor the premises of the health facility but rather the rubbish/refuse damp in front of the house.

6.2 Recommendations

Based on the above conclusions, the following recommendations are made to the DHMT, District Assembly, Non-Governmental Organizations, civil society organizations, and all decentralized departments for a collaborative action to be taken;

Health staff in the district should be given orientation by the District Assembly on cultural competence with respect to the culture of the study area to enhance staff appreciation of the interplay of cultural practices and health generation at the household level.

The R/DHMT should ensure that health workers posted to the district are incentivized to stay and work at all times in order that women's access to health services will be improved including skilled delivery care.

Demand for skill delivery should be created through strategic community based marketing programmes by identifying community opinion leaders and engaging them on issues of birth preparedness, and decision making at the household level.

The formal health system at the community level should work closely with traditional birth attendants to strengthen referral from the TBA to the health facility but still maintaining all local protocols.

Religious groups should be educated by the DHMT on the importance of skilled delivery utilization. These programmes can be channelled through religious and traditional/community leaders

DHMT should collaborate with the district assembly to increase the distribution of health facilities through the construction of CHPS compounds in rural communities so that women can readily access skilled delivery care.

The District Assembly together with the DHMT should identify health staff interested in midwifery and sponsor them to pursue midwifery training. Also indigenous/native Senior Secondary pupils who qualify into tertiary institutions should be identified, encouraged, and sponsored to pursue midwifery training.

Non-governmental organizations such as World Vision International should empower community members variously to demand for better health services including skill delivery through education programmes, and financing of women's group activities to improve on their economic livelihood.

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APPENDICES

Appendix 1: Household Questionnaire for WORA

UNIVERSITY FOR DEVELOPMENT STUDIES

SCHOOL OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF COMMUNITY HEALTH AND DEVELOPMENT

INFORMED CONSENT

I, Mumuni Braimah, is a master's student of the University for Development Studies UDS, Tamale. I am conducting a research on the determinants of low skill delivery in the Mamprugi Moagduri district.

I will be grateful if you could assist me with information by answering the following questions. Your objective responses will be analyzed and based on that recommendations will be made to re-strategize efforts to improve on facility based delivery in the district. The information that you will provide will be kept as confidential as possible.

Do you agree to continue with the research? 1. Yes [ ] 2. No [ ]

DEMOGRAPHIC BACKGROUND (WOMEN OF REPRODUCTIVE AGE, WORA)

1. Age (years) .....
2. Religion a. Moslem [ ] b. Christianity [ ] c. Traditionalist [ ] d. others (specify) .....
3. Educational level a. None [ ] b. Primary [ ] c. JHS [ ] d. SHS [ ] e. Tertiary [ ]
4. Marital status a. Single [ ] b. Married [ ] c. Divorced [ ] d. Others (specify).....
5. Occupation .....
6. Number of births.....
7. Number of births alive .....

ANTENATAL CARE/SKILLED DELIVERY

1. When you were pregnant (i.e. the last pregnancy and or including current pregnancies) how many times did or have you visit/visited the health facility? # .....
2. Verify Q1from ANC booklet # .....
3. How old was the pregnancy before you started attending antenatal care clinics? .....
4. Verify Q3 from ANC booklet the stage of pregnancy at first visit .....
5. Does someone decide for you when to start attending antenatal care visits? a. Yes b. No
6. If Yes to Q5, who largely decides for you? (Note. Only one response required)

   a. husband [ ]

   b. mother in-law [ ]

   c. father in-law [ ]

   d. sister in-law [ ]

   e. others (specify) .....
7. Do you go through some traditional rites before you can start attending antenatal services? a. Yes [ ] b. No [ ]
8. If Yes to Q7 how long does the traditional rites last? .....
9. Which of the following services did you receive during your antenatal care visits? (Note. Tick as respondent mentions, and or verify from ANC booklet)

   i. Weighed [ ]

   ii. Checked blood pressure [ ]

   iii. Received abdominal examination [ ]

   iv. Listened to baby's heart beat [ ]

   v. Asked about my medical history [ ]

   vi. Asked for urine sample [ ]

   vii. Took blood sample [ ]

viii. Received TT injection [ ]

ix. Received prophylactic malaria treatment drugs (i.e. IPT) [ ]

x. Received folic acid [ ]

xi. Took HIV test [ ]

xii. Discussed birth plan [ ]

xiii. Others (specify) .....

10. Where were/are you attending your antenatal care sessions?
.....

11. How do you transport yourself for antenatal care?

12. Who attends/attended to your antenatal care needs largely?
.....

13. Were you discussed with about birth preparedness plan? a. Yes [ ] b. No [ ]

14. If Yes to Q13, which of the following birth preparedness plans is discussed with you when you go for antenatal care visits?

i. Making arrangements to deliver in a place where there is a skilled provider [ ]

ii. Assist me in making arrangements on where to deliver [ ]

iii. Discuss with me the available means of transport to the place of birth with my family and close relations including emergency situations [ ]

iv. Discuss with me how decisions are made in the family i.e. .who usually makes decisions, and who else can make decisions if that person is not there? [ ]

v. Make arrangements to have adequate amounts of money as may be needed [ ]

vi. Also ensure that I have an adequate insurance cover e.g. NHIS [ ]

vii. Social support [ ]

viii. Items Needed for a Clean and Safe Birth [ ]

ix. Signs of Labour [ ]

x. Danger Signs in pregnancy [ ]

xi. Others (specify) .....

15. Do you know some of the danger signs during pregnancy? a. Yes [ ] b. No [ ]

16. If Yes to Q15, what are some of the danger signs during pregnancy?

    i. Chills and fever [ ]

    ii. Sudden, very bad or continuous pain in the lower abdomen [ ]

    iii. Continuous vomiting, nausea, or diarrhea [ ]

    iv. Bleeding from the vagina [ ]

    v. Blurred vision [ ]

    vi. Swelling feet, face, hands [ ]

    vii. Baby does not move for more than one day after the 20th week of the pregnancy [ ]

    viii. Baby moves less than ten times in two hours after the 28th week of pregnancy [ ]

    ix. Sores or blisters on the genitals [ ]

    x. Sharp pain during urination [ ]

    xi. Others (specify) .....

17. Name some of the main health and nutrition education services you receive during antenatal visits

    i. Maternal nutrition [ ]

    ii. Folic acid uptake [ ]

    iii. IPT uptake [ ]

    iv. Family planning [ ]

    v. Use of LLINs [ ]

    vi. Exclusive Breast Feeding [ ]

    vii. Timely and Appropriate Complementary Feeding [ ]

    viii. Others (specify)
    .....

18. Do you pay for any antenatal care services? a. Yes [ ] b. No [ ]

19. If Yes to Q18, what services do you pay for and for how much?

NO.	SERVICES PAID FOR DURING ANC	AMOUNT GH¢

20. Where did you or would you deliver?

    a. Home without health professional's assistance [ ]

    b. Home with health professional's assistance [ ]

    c. Health facility with health professional assistance [ ]

    d. Others (specify) .....

21. If response in Q20 is (a), what are the reasons why you delivered or you will deliver at home without health professional's assistance?

22. Does someone chooses/decides for you where to deliver? a. Yes [ ] b. No [ ]

23. If Yes to Q22, who chooses/decides for you where to deliver? (only one response)

    a. husband [ ]

    b. mother in-law [ ]

    c. father in-law [ ]

    d. sister in-law [ ]

    e. others (specify) .....

24. Where does the fellow in Q23 chose for you to deliver? (only one response)

    a) health facility [ ]

    b) TBA's house [ ]

    c) Others (sprcify) .....

25. (Probe) In your opinion, what are some of the reasons why some women in the community deliver at home

26. Do you know some of the danger signs of child birth (labor signs)? a. Yes [ ] b. No [ ]

27. If Yes to Q26, what are some of the danger signs of child birth (labor signs)? (Tick as many as respondent mentions)

    i. Severe vaginal bleeding [ ]

    ii. Green or brown water coming from the vagina [ ]

    iii. Fever [ ]

    iv. Prolonged (>12 hours) labor [ ]

    v. Others (specify)
    .....

28. Do you know some dangers signs after birth? a. Yes [ ] b. No [ ]

29. If Yes to Q28, what are the danger signs after child birth?

    i. Heavy/severe vaginal bleeding [ ]

    ii. Retained placenta (Placenta not expelled within 1 hour of birth) [ ]

    iii. Bad smelling vaginal discharge [ ]

    iv. High fever [ ]

    v. Painful urination [ ]

    vi. Hot, swollen, painful breasts [ ]

    vii. Others (specify) .....

30. After you gave birth did any health staff visit you at home? a. Yes [ ] b. No [ ]

31. If Yes to Q30, How long after your birth was the visit made by the health staff? (only one response)

    a. one-three weeks [ ]

    b. four-six weeks [ ]

    c. after six weeks [ ]

    d. others (specify) [ ]

32. Did you receive counseling on family planning during your antenatal care visits? a. Yes [ ] b. No [ ]

33. If Yes to Q32, which method are you practicing currently (Note: Only lactating mothers)
    .....

34. How long did you take to make your first visit to the health facility after birth? (only one response)

    a. one-three weeks [ ]

    b. four-six weeks [ ]

    c. after six weeks [ ]

    d. others (specify) [ ]

35. In this home, traditionally what is/must be done immediately to the mother after a safe delivery?

36. In this home, traditionally what is/must be done immediately to the baby after a safe delivery?

37. Traditionally who is supposed to handle your placenta after birth?
    .....

38. Who is qualified to bury your placenta after delivery?

39. Must the placenta necessarily be buried at a particular place? a. Yes [ ] b. No [ ]

40. If Yes to Q39, where must is necessarily be buried?
    .....

Appendix 2: Focus group discussion guide for opinion leaders in the community

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INFORMED CONSENT

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I will be grateful if you could assist me with information by answering the following questions. Your objective responses will be analyzed and based on that recommendations will be made to re-strategize efforts to improve on facility based delivery in the district. The information that you will provide will be kept as confidential as possible.

Do you agree to continue with the research? 1. Yes [ ] 2. No [ ]

FOCUS GROUP DISCUSSION GUIDE

1. Where do women deliver when they are in labor in this community?
   .....
2. What are some of the reasons why they deliver in Q1
   i. .....
   ii. .....
3. Who largely takes the decision where a pregnant woman should deliver?
   .....
4. Do men take part in preparing the woman for delivery? a. Yes #.....b. No #.....
5. If Yes to Q4, how do men help in birth preparedness of women? (Tick as many as possible)
   i. Making arrangements to deliver in a place where there is a skilled provider
   ii. Assist the client in making arrangements on where to deliver

iii. Discuss with client the available means of transport to the place of birth with her family and close relations including emergency situations

iv. Discuss with client how decisions are made in the family i.e. .who usually makes decisions, and who else can make decisions if that person is not there?

v. Make arrangements to have adequate amounts of money as may be needed.

vi. Also ensure that client has adequate insurance cover e.g. NHIS

vii. Social support

viii. Items Needed for a Clean and Safe Birth

ix. Signs of Labour

x. Danger Signs in pregnancy

6. Are pregnant women supposed to be supported to go for antenatal care services?

   a. Yes #..... b. No #.....

7. In what way should pregnant women be support to go for antenatal visits?

8. At what stage of the pregnancy are pregnant women supposed to start with antenatal care visits

Stage of pregnancy	Number of participants
First month	
Second month	
Third month	
Fourth month	
Fifth month	
Sixth month	
Seventh month	
Eighth month	
Ninth month	

9. Traditionally what is usually done at home before a pregnant woman starts attending antenatal care visits?
10. How long does the tradition take before the woman can start with antenatal care visits
11. Who decides when a pregnant woman starts attending antenatal care visits?
12. Does pregnancy have danger signs? a. Yes #..... b. No #.....
13. What are some of the danger signs of pregnancy? (Note. Tick as many as possible)
    i. Chills and fever
    ii. Sudden, very bad or continuous pain in the lower abdomen
    iii. Continuous vomiting, nausea, or diarrhea
    iv. Bleeding from the vagina
    v. Blurred vision
    vi. Swelling feet, face, hands
    vii. Baby does not move for more than a one day after the 20th week of the pregnancy
    viii. Baby moves less than ten times in two hours after the 28th week of pregnancy
    ix. Sores or blisters on the genitals
    x. Sharp pain during urination
    xi. Others (specify) .....
14. In your opinion what are some of the benefits of antenatal care visits?
15. In your opinion what are some of the benefits of health facility delivery?
16. Traditionally who is supposed to handle the placenta of a woman after birth?
    .....
17. Who is qualified to bury the placenta of a woman after delivery?
    .....
18. Where is placenta necessarily buried?