UNIVERSITY FOR DEVELOPMENT STUDIES

A COMPARATIVE STUDY OF THE UPTAKE OF SKILLED DELIVERY SERVICES IN TAMALE METROPOLIS AND THE NANUMBA NORTH DISTRICT OF GHANA

BY

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OCTOBER, 2015

DECLARATION

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

..... 15-02-2016

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I hereby declare that the preparation and presentation of the dissertation was supervised in accordance with the guidelines on supervision of thesis laid down by the University for Development Studies.

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ABSTRACT

There are disparities in the use of skilled delivery services between women in Tamale Metropolis and women in the Nanumba North District. Information on factors responsible for these disparities has not been adequately explained. The aim of this study was to compare the uptake of skilled delivery services among Nanumba North and Tamale Metropolis women. A comparative cross sectional study was conducted in the Tamale Metropolis and the Nanumba North District in the Northern Region of Ghana. The study population comprised 720 postpartum women who had delivered within the last three months prior to the study. Both qualitative and quantitative methods were used in the data collection. A two-stage cluster sampling was used to extract the study population. Younger mothers were found in the Nanumba North district than the Tamale Metropolis (52.9% versus 47.1%). The proportion of women who made at least four antenatal care (ANC) visits in the Tamale Metropolis was 48.6 % compared to 37.5% in the Nanumba North (Chi = 9.1, p = 0.003). Higher but insignificant proportion of Tamale Metropolis women delivered in health facilities than Nanumba North women (48.6% versus 41.7%) (Chi = 3.5 p = 0.06). The most frequently cited reason for not delivering in health institution in the Nanumba North was fear of caesarean delivery but in the Tamale Metropolis slow response of nurses (51.1%) and lack of privacy (52.6%) were given for non-patronage of skilled delivery services.

The factors that were found to influence the use of skilled delivery services in Nanumba North and Tamale Metropolis were not exactly the same. In the Nanumba North, women who attended ANC at least four times were 15.6 times more likely to deliver in a health institution, compared to women who attended for less than 4 times (AOR= 15.63, 95 % CI [8.16, 29.95]). The corresponding association for the Tamale Metropolis women was greatly reduced (AOR= 3.8, 95

% CI [2.33, 6.13]). Women who were far from health facility (> 4 km) had 85% protection against patronizing institutional delivery services (AOR= 0.15, 95 % CI [0.07, 0.29]). In the Nanumba North, distance ((> 4 km) was more of a constraint, compared to Tamale Metropolis since that protected 94 % of women from patronizing institutional delivery services (AOR= 0.06, 95 % CI [0.02, 0.13]). In Tamale Metropolis, maternal autonomy and parity were not important predictors of utilization of health facility for child birth but they were major determinants in Nanumba North. In Nanumba North, women of high parity (> 4) were 11 times more likely of delivering in a health facility, compared to women of lower parity (1-2) (AOR= 11.21, 95 % CI [4.56, 27.58]). Women of high autonomy (economic independence, decision making, freedom of movement) were 3.4 times more likely of delivering in a health facility, compared with women of low autonomy (AOR= 3.44, 95 % CI [1.85, 6.39]) in the Nanumba North. In Nanumba North, socio-economic status as measured by household wealth index was not an important predictor of utilization of health institutions for birth. Women of high household wealth index were likely to deliver in a health facility in the Tamale Metropolis. It can be concluded that women in the Tamale Metropolis attended ANC more frequently than Nanumba North women. However, the prevalence of institutional deliveries was not significantly different in the two settings. The large disparity in ANC adequacy between the two settings suggests more priority ANC services should be given to the Nanumba North. Enhancement of women autonomy in Nanumba North may greatly promote institutional delivery.

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DEDICATION

To my wife and children

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LIST OF ACRONYMS

ANC	Antenatal Care
CIWE	Composite Index for Women Empowerment
GDHS	Ghana Demographic Health Survey
GHS	Ghana Health Service
IMRaD	Introduction, Methodology, Results and Discusion
ISSER	Institute of Statistical, Social and Economic Research
JHS	Junior High School
MICS	Multiple Indicators Cluster Survey
NHIA	National Health Insurance Authority
SBA	Skilled Birth Attendant
SHS	Senior High School
TBA	Traditional Birth Attendant
UN	United Nations
UNICEF	United Nations Children Emergency Fund
UNFPA	United Nations Population Fund

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Each year, 120 million pregnancies occur. Over half a million women and more than a million newborns die due to complications of pregnancy and childbirth (DFID, 2005). Great disparities in perinatal health occur worldwide (WHO, 2006). Between 7 and 8 million perinatal deaths occur globally each year with the majority occurring in developing countries where over 90% of all infants are born (Brundtland, 2002). About 50% of maternal deaths in developing countries take place in Sub-Sahara Africa (UNICEF, 2008). The major causes of maternal deaths include unsafe abortions, eclampsia, bleeding, obstructed labour, infections and sepsis, reflecting poor provision and use of maternal health services (Sarah, 2009). Poor use of maternal health services is a result of barriers to access (Van Lonkhuijzen et al., 2009). Most maternal deaths would have been prevented if they had access to a skilled attendant essential midwifery care and emergency obstetric care (EmOC) and for every woman who dies, up to 50 more suffer avoidable and debilitating health problems such as fistulae, prolapse of the womb and infertility (DFID, 2005). Over recent decades, infant mortality rates have fallen, but stagnating neonatal mortality rates mean that deaths in the newborn period are becoming responsible for an ever-increasing proportion of infant and child mortality (Lopez, 2000). If the Millennium Development Goals in maternal and child health aimed at reducing child mortality are to be met, this will need to be addressed (Black, 2003). In Ghana, Infant mortality is 50 deaths per 1,000 live births and child mortality is 31 deaths per 1,000 children age one year. Neonatal mortality is 30 deaths per 1,000 live births in the most recent five year period, while the risk of post-neonatal mortality is 21 deaths per 1,000 live births (Ghana Demographic and Health Survey, 2008). Neonatal deaths

account for 60 percent of the deaths in infancy (GDHS, 2008). Often however, the true burden of maternal mortality and neonatal morbidity and mortality is concealed due to delays and difficulties in presentation for care and the relative speed in which newborns can succumb to infection or perinatal hypoxia and more so newborn deaths occurring in the community may often go unreported (Carolyn et al., 2007).

Antenatal care (ANC) is one of the key practices that have a beneficial influence on maternal health. Good antenatal care and high coverage is expected to impact positively on pregnancy and birth outcome and corresponding high levels of skilled attendance. Attendance for antenatal care represents a unique opportunity to improve the health of women and their infants and it is imperative that we optimize this opportunity by offering a full range of health promotion services that may include voluntary counseling and testing for HIV (VCT), screening and treatment for syphilis, intermittent preventive treatment for malaria in pregnancy (IPTp) and health education (Carolyn et al., 2007).

WHO (2010) recommends that, a minimum of four antenatal visits for care which include blood pressure measurement, urine testing for detecting bacteria and protein in urine, blood testing to detect syphilis and severe anemia, weight and high measurement to detect possible birth complications should be achieved before the woman delivers.

At delivery, the importance of skilled attendance has long been recognized (Carolyn et al., 2007). However, distance to health facilities, inadequate transportation and the need for immediate and specialized services have hampered women's ability to access these services (Brundtland, 2002). Attention to clean and hygienic delivery practices (WHO, 2003) and the provision of essential care for the newborn, such as thermal protection and early and exclusive breast-feeding (WHO, 1996), are important for the health of all infants whether born at home or in a health care facility.

A little above half (59%) of births in Ghana are delivered with the assistance of a health professional (i.e., doctor, nurse/midwife, community health officer/nurse), 30 percent are delivered by a traditional birth attendant, and about one in ten births is assisted by a relative, or receives no assistance (GDHS, 2008).

1.2 Problem Statement

There are disparities in the use of skilled delivery services between Tamale Metropolis and Nanumba North District women. In the year 2012, the annual reports of Ghana Health Service in the Tamale Metropolis and the Nanumba North District indicated that the use of skilled delivery services was 67% and 36% respectively. Information on factors responsible for these disparities has not been adequately explained. The disparities in the use of skilled delivery services could have an influence in high infant and maternal mortality rates and differences in the maternal mortality and morbidity rates. The use of skilled delivery services can avert some maternal and infant mortality. This study therefore sought to identify factors contributing to the disparities in the utilization of skilled delivery services in the Tamale Metropolis and the Nanumba North District.

1.3 Aim and Objectives of the Study

The general objective of the study was to compare the uptake of skilled delivery services among Nanumba North District and Tamale Metropolis women.

Specifically the study sought to;

i. Compare the rates of uptake of skilled delivery services in the Tamale Metropolis and the Nanumba North District

ii. Assess the quality of skilled delivery services in the Tamale Metropolis and the Nanumba North District

iii. Identify the determinants of the uptake of skilled delivery services in the Tamale Metropolis and the Nanumba North District

iv. Identify the barriers to the uptake of skilled delivery services in the Tamale Metropolis and the Nanumba North District

1.4 Research Questions

i. How significant is the differences between the uptake of skilled delivery services in Tamale Metropolis and the Nanumba North District.

ii. What factors account for the disparities in the utilization of skilled delivery services between Tamale Metropolis and Nanumba North District women?

1.5 Significance of the Study

As 2015 is getting closer, so much is still required of Ghana towards the achievement of the MDG's especially goals 4 and 5 which focus on the improvement of maternal and child health. The current indicators on the uptake of skilled delivery services in the study area show that much is desired from policy makers and health care providers to ensure the achievement of these goals. Findings from this study would therefore guide Metropolitan/District Health Directorates and other agencies that are working in the area of maternal health to devise ways of improving the uptake of skilled delivery services.

1.6 Organization of the Thesis

This thesis has been presented or organized into six chapters using the IMRaD arrangement which involves; Introduction, Methodology, Results and Discussions. The conclusion and recommendations and the appendices of the study are also added or incorporated in the report.

Chapter one includes the introduction to the study, background to the study, the problem statement, the study objectives, the significance of the study, conceptual framework and the operational definition of terms as used in the study.

The second chapter contains relevant literature in relation to the study. The methodology, which is made up of the study design, study type, study variables (independent and dependent variables), data collection instruments, sampling procedure and sample size, study population, sources of data, data collection methods, determination of educational level, determination of household wealth index, quality control measures, some ethical considerations as well as plan for dissemination of results are captured in the third chapter.

The results and findings of the study are presented in chapter four whilst the discussion of the results and findings of the study is done in chapter five. The conclusion and recommendations of the study are also presented in chapter six. References cited in this study and the study questionnaires are attached as appendices of this report.

1.7 Conceptual Framework

The Andersen's (1995) behavioral model of health service utilization was adopted as the conceptual framework for the study. The model is aimed at demonstrating the factors that lead to the use of health services/facilities. According to the model, usage of health facilities is

determined by four factors; the external environment, predisposing factors, enabling factors and need factors.

The external environment looks at the type and quality of health services, geographical location and community networks. The predisposing factors are maternal age, maternal education, parity, ethnicity, religion and women's autonomy whiles the enabling factors are information availability, household wealth index, occupation, distance to facility and transportation to facility.

According to the behavioral model proposed by Andersen (1995), need factors are fundamental to healthcare seeking behavior, that is, one should perceive a condition as susceptible and severe enough before seeking care to gain benefits. For institutional delivery service utilization, the pregnant woman and her family must recognize pregnancy and childbirth as abnormal events, where life-threatening situations may arise without any prediction. In fact, need factors can be driven by pregnancy-related factors such as awareness, health knowledge of pregnancy and risk, importance given to pregnancy, community customs, previous facility use, parity and pregnancy complications. The women who perceive the need for professional help and recognize the risk of pregnancy and delivery are expected to make antenatal visits and prepare for childbirth.

The study therefore assessed the quality of health service delivery and how the socio-demographic characteristics, geographical access and maternal autonomy of the study population lead to the uptake of skilled delivery services.

Figure 1.1 depicts the conceptual framework, which is adapted from Andersen's (1995) behavioral model for the utilization of health services.

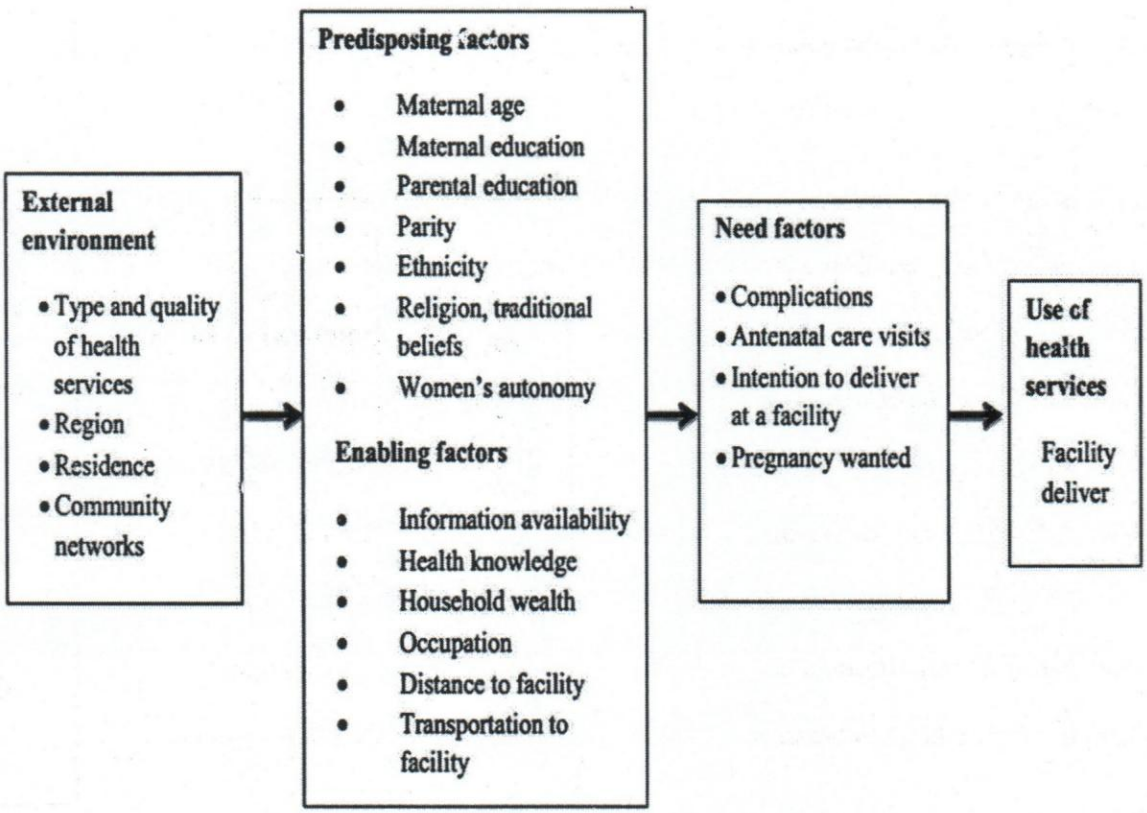

Figure 1.1: Conceptual framework of factors associated with the utilization of institutional delivery service.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews relevant literature in relation to the uptake of skilled delivery services among rural and urban women. Literature was reviewed in direct relation with the study objectives and the conceptual model of the study. Some of the areas in which the review covered were an overview of the uptake of skilled delivery services in the world, Africa and Ghana, determinants of the uptake of skilled delivery services and the differentials in the uptake of skilled delivery services among rural and urban women.

2.1 Overview of Maternal Health and Skilled Delivery

In September 2000 the members of the United Nations (UN) adopted the Millennium Declaration and set eight millennium development goals, one of which is reducing maternal mortality. Delivery by Skilled Birth Attendants (SBA) serves as an indicator of progress towards reducing maternal mortality worldwide and is one of the Millennium Development Goals (MDG). Use of SBAs during pregnancy, labour and delivery during the postpartum period could prevent many instances of maternal morbidity and mortality. Unfortunately, qualified midwives, nurses and doctors are often not available in the rural areas of many developing countries where most women are delivered.

The United Nations in the year 2010 reported that maternal mortality remains unacceptably high even though new data that was available showed signs of progress in improving maternal health — the health of women during pregnancy and childbirth — with some countries achieving significant declines in maternal mortality ratios. The report further reiterated the fact that

progress is still well short of the 5.5 per cent annual decline needed to meet the MDG target of reducing by three quarters the maternal mortality ratio by 2015. Progress has been made in sub-Saharan Africa, with some countries halving maternal mortality levels between 1990 and 2008. According to the report, other regions, including Asia and Northern Africa, have made greater headway (UN, 2010).

According to a report by UNFPA (1999), skilled attendance at birth has been adopted as a leading indicator of maternal health for numerous international agreements and agencies. Recent international conferences at which the importance of skilled attendance was noted include the 1990 World Summit for Children, the 1994 International Conference on Population and Development, the 1995 Fourth World Conference on Women, the 1997 Safe Motherhood Initiative Technical Consultation and the 1999 International Conference on Population and Development.

Although all women and babies need pregnancy care, care in child birth is most important for the survival of pregnant women. However, around the world, one third of births take place at home without the assistance of a skilled attendant (WHO, 2004). The WHO (2006) strongly advocates for skilled care at every birth to reduce the global burden of 536 000 maternal deaths every year.

The importance of skilled delivery is further illustrated by the fact that in 12 of 27 countries categorized by the World Bank and International Monetary Fund as 'highly indebted poor countries, reporting on increases in the use of a skilled attendant at birth is required as a condition for securing international debt relief (IMF, 2004).

The WHO (2007) stated that there are still 3 million stillbirths and 3.7 newborn deaths each year. Skilled attendants has been defined by WHO (2004) as "an accredited health professional- such

as midwife, doctor or nurse, who has been educated and trained to proficiency and 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 newborns.

WHO (2008) estimated skilled attendance to have reached 99.5%, on the other hand, 46.5% and 65.4%, of women gave birth with professional assistance in Africa and Asia respectively.

It has been established that certified nurse/midwife attendance during delivery saves lives of mothers and children (MacDorman & Singh, 1998). According to UNFPA (2008), evidence from many countries, such as China, Cuba, Egypt, Jordan, Malaysia, Sri Lanka, Thailand and Tunisia, indicates that skilled midwives functioning in or very close to the community can have a drastic impact on the reduction of maternal and neonatal mortality.

In the year 1997, the World Health Organization estimated that, in low income countries about 60.0% of birth occurred outside health care facilities with 47.0% occurring with the assistance of traditional birth attendants, family members and other times with no help from anyone.

The WHO (2004) further proposed that by the year 2015, 90.0% pregnant women globally should be supervised by skilled attendants during delivery.

In 2004, the UNFPA reported that the percentage of skilled attendant in the developing countries also increased from 42.0% to 52.0% from the years 1990 to 2000, a representation of 24.0% in the developing countries as a whole. Again, as reported by UNFPA on the progress from the field, Botswana, Burundi, Senegal, Uganda and Zimbabwe have developed policies defining a skilled attendant and strategies to increase the proportion of deliveries they attend. The report indicated that, in Burundi, only 9.5 per cent of deliveries occurred in health facilities. Burundi has since that time designed reproductive health programme which has designated strategies to

increase the proportion of attended births, such as enhancing the technical capacity of personnel and facilities and promoting the use of partographs during labour.

The World Health Organization in the 2007 updates of the proportion of births attended by skilled birth attendants estimated that 63.1% of births were attended to by skilled professionals globally, 59.1% in the more developed countries whilst 34.3% in the less developed countries (WHO 2007 updates on proportion of births attended by skilled attendants). However in African countries, such as Ethiopia, Niger, Chad and Burundi deliveries assisted by skilled personnel was still very low (Kristen, et al, 2006). In Ghana, the proportion of births attended by skilled professionals in 2003 was 47.1%.

The MDG report of 2006 stated that some regions of the world with dramatic gains in the proportion of deliveries attended by SBAs since the millennium declaration recorded more reductions in maternal mortality ratios. The report stated that a 50% reduction in the maternal mortality ratio was observed in Egypt following the doubling of the proportion of deliveries attended by skilled attendants.

Providing skilled attendants for delivery care, along with the equipment, drugs and supplies necessary for effective management of obstetric complications, is now being advocated as the single most important factor in preventing maternal deaths (WHO, 1999). For this reason, the benchmark indicator "percentage of births attended by a skilled attendant" is currently used to monitor progress toward international goals for maternal mortality reduction (UNSD, 2002).

Several interventions targeting the reduction of maternal mortality have been implemented in Ghana. Among these is the user fee exemption policy instituted in 2003. This policy exempts all

pregnant women from paying for delivery costs at public, mission and private health facilities (Witter et al., 2007).

According to the 2008 Ghana Demographic and Health Survey, 57% of births occurred in health facilities, with 48% in public health facilities and 9% in private health facilities. Forty-two percent of births take place at home. The results also show that medically trained providers assisted 59% of deliveries, TBAs assisted 30% of deliveries, and relatives or friends assisted 8% of deliveries. There has been an increase in access to professional assistance during delivery over the past five years, from 47% in 2003 to 59% in 2008; over the same period, there has been a decrease in the use of relatives or no assistance at delivery, from 21 to 11%. Despite these improvements, medically assisted deliveries continue to be low in Ghana, with 41% not benefiting from professional delivery assistance over the past five years.

2.2 Determinants of the Uptake of Skilled Delivery Services

Qualified antenatal care, skilled birth attendants, access to emergency obstetric care and neonatal resuscitation skills are vital components to substantially reduce maternal, perinatal and neonatal mortality in developing countries (Starrs, 2007). The level of skilled birth attendance varies markedly among and within regions and countries, being well below 50% in many countries in South-East Asia and Sub-Saharan Africa (UNICEF, 2010). Although official nation-wide figures may show high coverage rates, this picture can be misleading. Typically, rates of skilled attendance are lower in rural than in urban areas (Say et al, 2007). A typical example was reported from Tanzania where in 2004/2005 the average rate of skilled attendance was as high as 81% in urban areas and as low as 39% in rural, remote districts. Even within rural regions, marked differences may exist which can be related to cultural norms, socioeconomic circumstances, accessibility of health institutions and service provision (Gabrysch and Campbel,

2009). In the case of nomadic populations and peasant farmers, it is even more difficult to provide health services, including obstetric care with skilled birth attendance (Sheik-Mohamed and Velema, 1999).

The WHO in 2005 estimated that 34% of mothers globally deliver with no skilled attendant; this translates into 45 million births occurring at home without skilled health personnel each year. Skilled attendants assist in more than 99% of births in developed countries compared with 62% in developing countries. In five countries including Ethiopia the percentage drops to less than 20% (WHO, 2005).

Available literature suggests that several factors are responsible for the uptake of skilled delivery services by pregnant women. Extensive studies have been carried out in different countries to establish these factors. Baral et al (2010) found that socio-economic, cultural and religious factors play a significant role in the use of Skilled Birth Attendance for delivery in Nepal. Availability of transportation and distance to the health facility; poor infrastructure and lack of services; availability and accessibility of the services; cost and convenience; staff shortages and attitudes; gender inequality; status of women in society; women's involvement in decision making; and women's autonomy and place of residence are significant contributing factors for uptake of Skilled Birth Attendance for delivery in Nepal.

According to McCarthy and Maine (1992), socio-economic factors that affect access to health care and causes maternal mortality operates at the individual, family and community level and is a complex issue. The individual woman makes decisions about her health depending on her educational level, occupation, level of personal income or wealth and her autonomy. The aggregate family income and occupation and education of family members could also affect access to health care for the woman. With the community, the collective resources and wealth

plays an important role in the socio-economic aspects of the health needs of community members.

Deogaonkar (2004) also identified the autonomy of women to be a factor that influences the uptake of skilled delivery services .He found that women in India find themselves in subordinate positions to men socially, economically and culturally. They are economically dependent on men. Women are largely excluded from making decisions, have limited access to and control over resources, are restricted in their mobility, and are often under threat of violence from male relatives.

In Tanzania, a study by Mrisho et al (2007) found ethnicity, gender of the household head, maternal education level, and the maternal age at child birth, socio-economic and quality of services status as significant independent factors in determining the choice of delivery place. The study also identified sudden onset of labor or short labor as some factors that affect decisions towards selecting the delivery place. Selecting health facility for delivery was perceived to be more desirable for prolonged labor.

A study by AbouZahr (2003) showed that factors such as cultural beliefs, socio-demographic status, women's autonomy, economic conditions, physical and financial accessibility, disease pattern and health service issues are important determinants of the use of maternal health care services.

Another study from India by Shariff et al (2002) pointed out that the low utilization of maternal health services was due to low levels of household income, high illiteracy and ignorance, and a host of traditional factors.

In Pakistan, Babar et al (2004) found poor socio-economic status, lack of physical accessibility, cultural beliefs and perceptions, low literacy level of the mothers and large family size as the leading causes of poor utilization of maternal health care services.

In another study from Ethiopia, it was observed that the use of maternal health services can be influenced by the socio demographic characteristics of women, the cultural context, and the accessibility to these services (Yared et al, 2003).

According to Thind et al (2008) the choice of place of delivery by Indian women is greatly influenced by paternal education level, and scheduled caste status are the predisposing factors that determined the choice of private facilities, public and home deliveries.

In Pakistan, the size of family, parity, educational status and occupation of the head of the family are also associated with the use of maternal health services in addition to age, gender and marital status (Babar et al, 2004).

2.3.1 Transportation and Distance to the Facility

Distance to the health facility has been found to be a significant determinant of the type of delivery care sought for by pregnant women. This is further made worse by the fact that there are no means of transport to the health care facility (Mpembeni et al, 2007).

A study conducted in India has shown that distance from private hospitals does not affect health but rather distance from public health care center does (Deogaonkar, 2007). People in remote areas with poor transportation facilities are more often removed from the health care centers. People are deterred from using existent facilities at health care centers because they are inadequate, insufficient and equipping these facilities is difficult and ineffective.

Large disparities still exist in providing pregnant women with antenatal care and skilled assistance during delivery. Poor women in remote areas are least likely to receive adequate care. This is especially true for regions where the number of skilled health workers remains low and maternal mortality high — in particular sub-Saharan Africa, Southern Asia and Oceania (UN, 2010).

Several studies have reported that transportation and distance to the health facilities ,staff attitudes towards service users, inadequate numbers of SBAs, service delivery systems and poor physical infrastructure in the health facilities ,women's age, parity and education, perceptions of safe pregnancy, place of residence thus urban/rural, gender inequality, cultural and religious beliefs, decision making power, socio economic status of women and geographical barriers including poor communication and road links are associated factors that affect the uptake of SBAs in Nepal (Baral et al, 2010).

A study in Afghanistan by Bartlett et al (2005) stated that challenges to health care provision in Afghanistan are compounded by the fact that 77% of Afghans live in sparsely populated areas separated by large expanses of difficult terrain and poor transportation infrastructure. For women in some remote areas, more than 2 weeks of travel time is required to access a skilled birth attendant, this is important because both infant and maternal deaths have been found to vary with distance from urban centers.

Nepal's challenging terrain and poor communication network meant that travel to the facility is often difficult especially in the hill and mountain districts of Nepal. Poor or none-existent road links caused transport to be an important barrier. When travel times have to be measured in hours or even days rather than minutes because of the topography of the country (and most people travel without transportation), these become great deterrents to service use (Hotchkiss, 2001).

Limited geographic access to maternal health services is a further barrier in the remote rural areas of Nepal (Rath et al, 2007). A period of armed conflict between the years of 1996-2006, further exacerbated the limited use of maternal health services (Thapa, 2003).

A study in 2003 found that the armed conflict had affected women's access to emergency obstetric care through increased barriers to travel and security (Wagle et al, 2004). Studies from Afghanistan, Bangladesh, Malawi and Nepal have shown that living one hour away from a health facility increases the chance of a home delivery without a SBA eight times more than if the patient lived a distance of under one hour away from a health facility. (Kamwendo et al, 2005). Distance from a facility adds to the financial burden facing households through transport charges and time spent as well as other indirect cost for a delivery (Sharma,2004)

2.3.2 Effect of Attitude of Skilled Attendants on the Uptake of Skilled Delivery Services

Both positive and negative attitudes of staff play a part in the utilization of SBAs in various ways. Staffs' positive attitude towards women during labour e.g. giving reassurance and encouragement and politeness encouraged use of SBAs. Studies from different developing countries have shown that negative attitudes like rudeness, shouting during labour, lack of empathy, refusal to assist, and lack of moral support, making patients wait and giving priority on the basis of links to status, caste and ethnic, language and religion all discourage use of SBAs (Kamwendo and Bullough, 2005). Similarly, a study from Nepal shows that too many outpatients in the departments of the facility make it difficult to manage privacy and confidentiality and lack of adequate training to service providers to maintain privacy and confidentiality also discourage use of SBAs (Pradhan, 2005).

Upgrading delivery care often begins with improving the quality of personnel and services offered in facilities. When facilities have qualified personnel with the right attitude and provide

quality services, they become widely used and trusted by community members (UNFPA, 2004). The lack of doctors, nurses and midwives and also the presence of all these people without the right attitude towards clients constitute serious problems for developing countries. Essential competencies are also needed at the referral level. A study in Burkina Faso, for example, found that caesarean sections are sometimes referred from the district level. Pre-service training institutions are not producing graduates with the essential competencies and attitudes of a skilled attendant–either for routine obstetric care or for emergency obstetric care (Global Health Council, 2008).

A woman reported about the attitude and competencies of a skilled attendant and made a statement such as "even the delivery went normally, but there was a nurse, who was just in training, and after my baby was born, he pulled the placenta out by force.... when he pulled, another nurse shouted at him: '*Don't do that!' I was torn badly down there, so they had to stitch it all up, but everything got so infected, and that infection never seems to have gone away*" (Campbell-Krijgh et al, 2003).

According to Cotter et al (2006) women in Kenya place value on delivery by a traditional birth attendant (TBA) because of the attitude of nurses and other skilled attendants. The society respects and uses the services because of the attitude of some health professionals towards women especially those within the lower social class.

Ghana's free delivery care policy is seen as an effective approach to increase the utilization of skilled care for delivery. However, this has proved to be wrong because despite the delivery-fee-exemption policy, the utilization of delivery services is not encouraging because of poor attitude of nurses towards clients, poor quality of care, low staff strength, poverty, transportation, long

distances to health facilities, socio-cultural barriers, and the custom of using traditional birth attendant still remains and these hinder access to skilled delivery (Impact, 2007).

A study in Niger shows that the main reason for delays to go to health facility was due to past experience of poor outcome of pregnancy such as still birth, poor management of treatment. Women may choose a place for delivery because they feel that staff non responsive, rude, refusal to assist them, lack of empathy, lack of confidentiality and privacy. Further they experience long waiting time (Meyer, et al., 2007; Duffy, 2007; D'Ambruoso, et al., 2005).

Gessessew and Melese (2002) stated that poor staff attitude in addition to problems of financial cost of drugs, supplies , equipments , transport and distance to facility, poor staff attitude leads to poor quality to conduct delivery delay women to seek care at facility level.

2.3.3 Influence of Maternal Education and Empowerment on Skilled Delivery

According to Kabeer (2003), there are three dimensions in women's empowerment: resources agency, and achievement. Resource refers to the fundamental conditions under decision making, which include land, equipment, finance, working capital, and also knowledge, skills, creativity, imagination, etc. (Kabeer, 2003). However, as Kabeer (2003) indicates, the problem of using the above ownership of assets or resources is that it does not reflect women's rights in the dynamic process of treating the assets; in other words, women's empowerment cannot be fully reflected by what they own (Kabeer, 2003). Therefore, Sathar and Kazi (1997) suggest using "having a say in decisions related to particular resources, for example, household expenses" as the measurement of resources. Agency is the process of making choices itself. He further stated that women's empowerment is not about what the women own, but the freedom to make choices/decisions (or the freedom not to make decisions). He proposed measurement of agency

such as domestic violence, women's mobility, and women's power in various domestic decision-making—presented by decision-making indicators as household purchase, children's education, health, family planning methods, women's employment, the treatment of assets, etc. (Kabeer, 2003). His study also talked about the achievements of women and said they are the outcomes of the choices and emphasizes that the measurement of achievement should reflect the gender difference based on the ability to make choices instead of preferences. Concerning the measurements of women's empowerments, Kishor (1997) defines three sets of indicators of women's empowerment, including "direct evidence of empowerment, sources of empowerment, and setting indicators". The direct evidence of empowerment embraces indicators of women's power compared to men, for example, women's participation in domestic decision making, the existence of domestic violence, and mobility, etc. Sources of empowerment refer to women's employment and education. Setting indicators usually reflect family structure or marriage setup, including living with in-laws, the age and education difference between husband and wife (Kishor, 1997).

All these three sets of indicators have been used in most literature to test the relationship between women's empowerment and uptake of maternal health services. Evidences of significant impact of the above three sets of empowerment indicators are found (Kishor, 1997).

Gage (1995) tests the linkage between women's position and contraceptive behavior. It finds that women who work for cash and are able to select their partners have significantly higher chance to communicate with the partner about maternal health services usage. Hogan (1999) finds out that polygamy does not affect women's use of maternal health services; on the other hand, sources of empowerment, women's status, literacy and employment are significant.

Direct evidence of empowerment, an index of women's involvement in domestic and fertility decision making significantly affects contraceptive knowledge and use. In Schuler & Hashemi (1994), a woman's empowerment is defined here as a function of her relative physical mobility, economic security, ability to make various purchases on her own, freedom from domination and violence within her family, political and legal awareness, and participation in public protests and political campaigning. All these variables are combined into a composite indicator. This single indicator can be seen as an index of direct evidence of empowerment.

Schuler & Hashemi (1994) finds out that this index has significantly positive impact on the use of maternal health services. Malhotra, et al (1993) uses aggregate data for districts of India, finding that male-dominating societal structure has prediction power on fertility. The main indicators it uses are the ratio of female to male mortality and female share of the labor force. It turns out that both variables significantly predicted district total fertility rates. Except the above literature which discuss women's empowerment in general and its impact on their reproductive health, another set of research specifically concentrates on the relationship between female schooling and fertility. There are many reasons for the negative correlation of these two variables. First, female education increases women's productivity and therefore makes the opportunity cost of childbearing higher since taking care of children is time-intense for women (Long and Osili 2007). Second, education lowers mortality rate; therefore, women need less births in order to get desirable family size (Schultz, 1994). Third, women with higher education tend to choose quality over quantity of the children (Becker, 1960). Fourth, a women's education is connected with her husband's education; therefore, female education has multiplier effect on household income (McCrary and Roger 2006). Fifth, women with higher education tend to have better knowledge of maternal health services (Rosenzweig and Schultz, 1989).

According to Chengxin (2005) there are two major approaches in an empirical study of the impact of female education on reproductive health. First, reduced-form relationships—only exogenous explanatory variables are included. This means family decision variables cannot be added, because they are usually jointly determined with women's choices. For example, migration and income are both jointly determined with reproductive health as life-cycle decisions (Schultz and Benefo, 1996). However, the significant relationship found in the reduced-form estimation cannot be explained as causal relationship for the following reasons. First, omitted unobservable in the error term might affect both the decision of education and giving birth. Second, fertility might interrupt school; therefore fertility is endogenous (Angrist and Evans, 1999). The second approach is structural-form relationship. Exogenous changes from natural experiments have been used as Instrumental Variables to test the causal relationship between education and fertility.

In order to test the causal relationship between women's education and use of reproductive health services, many literature try to find instrumental variables in natural experiments. Long and Osili (2007) uses Universal Primary Education program in Nigeria as an exogenous change. First, the difference in Universal Primary Education regional and age difference is used to estimate educational attainment.

Secondly, the exogenous educational change is used as the Instrumental Variable to estimate the causal relationship between education and use of maternal health services. It is estimated that one year increase in education increases the uptake of maternal health services (McCrary and Roger, 2006).

Falkingham (2003) found a strong relationship between maternal education and the use of skilled attendance, but levels of education are classified differently. For example, in most African

settings, effects of primary education versus no education are already well discernible. In Tajikistan, where most women have secondary education and 40% delivered at home in 1998, there is no differential in service use up to secondary education, but those with higher education are more likely to deliver in a facility than the rest.

Maternal education can have an empowering effect on women, broadening their horizons, choices, and opportunities and "enabling women to take personal responsibility for their health and for that of their children" (Paul and Rumsey, 2002). Higher levels of maternal and head of household education are associated with increased use of health care during pregnancy as well as having a modern delivery or a delivery by trained personnel (Navaneetham and Dharmalingam, 2002).

2.4 Disparities in the use of Maternal Health Services among Rural and Urban Women

Rural mothers and their children comprise a large segment of the world population. Thus, health disparities between rural and urban groups are of national concern (Geronimus, 2000).

According to Schwartz et al (2010), increased rates of adverse pregnancy outcomes in rural areas, such as preterm birth and low birth weight have been observed, as well as higher rates of infant mortality. Merzel and Gender (2000) stated that access to prenatal care and skilled delivery services is critical for reducing maternal and infant morbidity and mortality, though rural women tend to receive less adequate prenatal care than their urban counterparts.

A study by Maine (2007) found that the risk factors for maternal and infant mortalities tend to disproportionately affect women in rural areas, the health status of rural mothers and infants can be largely improved by eliminating existing barriers to high quality, comprehensive prenatal care

and skilled delivery. Improving the health of rural mothers and infants, from preconception to pregnancy to birth and beyond, advances the health of the next generation.

In recent years there has been a renewal of interest in geographic characteristics within public health, particularly in the areas of maternal and child health. Past research by the WHO (2005) has documented a difference between urban and rural health care, usually expressed in terms of healthcare access and utilization, cost, and geographic distribution of providers and service.

Mainous and Kohrs (1995) used a framework that examines determinants of maternal health services utilization. They identified environment-specific factors that may contribute to different health outcomes for urban and rural women.

According to the Rural Healthy People 2010 survey, maternal, infant, and child health was ranked as the ninth highest rural health priority and was identified by 25 percent of state and local rural health respondents as a rural health priority.

According to Stephenson et al (2008) twice as many maternal deaths occur during labour in rural areas compared to urban areas (4.6 versus 2.3 per 1,000 live births in 2005 in most sub-Saharan African countries). National maternal mortality rates by area of residence show rates to vary across urban and rural regions. According to national data from 2000 through 2005, maternal mortality rates for nonmetropolitan areas appear to be double of metropolitan areas.

A number of state-based studies conducted in Washington, Illinois, Wisconsin, and Virginia found comparable trends in inadequate prenatal care and skilled delivery services among rural women (Morgan et al, 2002).

In contrast, a study of Hispanic women in San Diego County, California, found rural women tend to enter prenatal care earlier than urban women and also use skilled delivery services more than urban women (Hartley, 2004). Those delivering in urban county hospitals in 2001-2004 were twice more likely to delay prenatal care beyond 24 weeks gestation than women who delivered in rural hospitals, independent of other factors such as income, education, marital status, language, pregnancy wantedness, and total number of barriers to care.

According to Phillips and McLeroy (2009) the most frequent barriers to prenatal care and skilled delivery services are the same for urban and rural women: lack of money, distance to care, lack of transportation, and depression.

Pregnant women residing in rural areas with fewer available obstetric services in their communities frequently opt to deliver outside their communities in Uganda. This is because seeking services outside the community is considered an indicator of inadequate access to care. Rural women seeking obstetrical services outside their local community hospital experience more complications during delivery and higher rates of preterm birth compared to rural mothers who deliver at local facilities (Milton and Angela, 2009). The infants treated in facilities outside the community also have longer and more expensive stays.

According to data from the 1995 National Survey of Family Growth, fewer nonmetropolitan mothers have insurance to cover all expenses associated with labor and delivery. Thus, a higher percentage of nonmetropolitan residents pay out-of-pocket expenses for all or part of their labor and delivery charges.

The WHO (2000) indicated that a decrease in obstetric services in rural areas has created a barrier to prenatal and obstetric care, particularly for women with high-risk pregnancies. In the 1980s, there was a transition to regionalized systems of perinatal care to provide access to tertiary care for high-risk, rural mothers and their infants. Regionalization led to marked improvements in birth weight-specific infant mortality rates among rural infants, but regional variation remains. Furthermore, interhospital transport has been associated with excess morbidity as well as additional expense, stress, and inconvenience.

Women of lower socioeconomic status and minority populations are more likely to live in rural areas and are more likely to lack health insurance (Kish, 2007). Thus, these populations face barriers to care, receive poorer quality care, and disproportionately use emergency systems. Other commonly represented populations in rural areas are undocumented immigrants and transient populations. The high prevalence of individuals without health insurance or citizenship creates a greater burden on available systems. This often leads to vast disparities in health care outcomes as well as a two-tiered health care system where insured individuals have access to preventive and routine health care while marginalized populations utilize "safety-net" emergency room care.

Despite negative health behaviors, many aspects of rural social life contribute to positive health outcomes. Rural areas frequently have strengths including dense social networks, social ties of long duration, shared life experiences, high quality of life, and norms of self-help, and reciprocity. Addressing the health care needs of rural women requires building upon the positive aspects of rural life while addressing the health, public health, infrastructure, and economic needs of rural areas (Kletke et al, 2008).

A report by World Bank (2010) "Las Casas Maternas en Nicaragua" reported that 60% of maternal mortalities are from rural areas. The problem of maternal mortalities stems from the larger issues of rural versus urban access to education, health services, and employment. Furthermore, rural women in Nicaragua have higher levels of unemployment and poverty, and lower levels of education.

Evidence indicates that rural women have limited access to health care and that rural areas are underserved by primary care physicians. In the developing and developed world, many rural individuals must travel substantial distances for primary medical care, requiring significantly longer travel times to reach care than their urban counterparts. Furthermore, some rural areas have a higher proportion of uninsured and individually insured residents than urban areas (Stephenson et al, 2006).

Most studies have shown that the conditions that affect maternal health in developing countries are more favorable in cities than in rural areas. In the less developed countries, place of residence usually determines people's life-styles, their economic, social and cultural activities, and, most importantly, their health conditions (United Nations, 1985). One of the reasons forwarded to explain the urban health advantage has been that unlike villages, cities generally have an important modern health care system -which facilitates public health interventions, such as campaigns to control epidemic diseases, vaccination and maternal-and-child health programs-, compared to rural areas. Some studies point out that even when health facilities are available in rural areas, they are often ill-suited to deliver the primary health services needed by the rural populations, and that people have to travel a greater distance to obtain care than do urban dwellers (Sastry, 1997; Lalou and Legrand, 1997; United Nations, 1985).

The urban environment is also generally more salubrious. Furthermore, the development of road and rail links ensures that urban populations receive a fairly regular and abundant supply of foodstuffs (Baloba, 2005).

Another general presumption in the literature is that urban populations generally have an advantage over rural people in the availability of water supply, housing and sanitation, and other areas of social programming that directly affect health and mortality. Overall, cities are perceived as having a concentration of wealth, power and western culture, together with services and modern equipment, whilst villages spell out poverty, underdevelopment and lack of services (Kuate, 1996; Lalou and Legrand, 1997).

The factors that are mostly considered to influence the disparities between rural and urban women in utilization of health care services are; maternal education and the type of place of residence (rural versus urban) which are the socioeconomic covariates most frequently used in studies of maternal health care services utilization (Sastry, 1997).

Other studies have shown that the urban advantage -particularly in skilled delivery services utilization has supposedly faded in recent decades, since the urban population explosion in most sub-Saharan African countries has not been matched by an adequate expansion of health services and livelihood opportunities (Brockerhoff and Brennan 1998; Lalou and Legrand, 1997).

Although many studies have documented health differentials by rural-urban place of residence in less developed countries, and particularly in sub-Saharan Africa (Smith et al., 2005; Fotso and Kuate, 2005; Garrett and Ruel, 1999; Sastry, 1997) little is known about how these differentials have changed over time as levels of urbanization rose and the social and economic development processes unfolded. A study by Gould (1998) showed that the urban-rural mortality gap in Kenya has narrowed within the last half-century, as a result of rapidly declining rural

mortality over most of the period, and more recently, due primarily to a stalling and even upturn in urban mortality, resulting from the deterioration of living conditions in rapidly growing cities. Assessing the robustness of this finding on a larger sample of countries, and using other health outcomes like malnutrition, is likely to provide important insights into the issues of urbanization and child health differences across rural and urban areas.

A number of authors have reported that urban-rural gaps in health even persist when differences in the composition of rural and urban populations are taken into account (Adair and Guilkey, 1997; Madise et al., 1999; Tharakan and Suchindran, 1999; Sastry, 1997). Some recent studies of health determinants, however, concur that the effect of residence on health is reduced to statistical insignificance when socioeconomic characteristics are adjusted for (Senior et al., 1999).

Place of residence has been found to influence the utilization of maternal health care services. For example, in Ethiopia, rural women have been found to be generally less likely to give birth in a health facility compared to their urban counterparts (Mesfin Nigussie and Getnet 2004), and a similar situation was observed in Nigeria (Babalola and Fatusi 2009). Moreover, a study done in Ethiopia using the country's 2000 Demographic and Health Survey data, found that 27% of mothers who gave birth in the five years before the survey received antenatal care from health professionals and of this urban women showed higher use of antenatal care than their rural counterparts; 83% of women in Addis Ababa, the country's capital city, compared to 22% in the rural regions (Mekonnen and Mekonnen 2003).

In his study, Dagne (2010) found that women living in rural areas had a 69% less odds of delivering by assistance from health professionals when compared to urban women. In a three-country study, Smith and Sulzbach (2008) observed that across all three countries, living in an

urban area was associated with higher odds of delivering at a health facility; in Mali, living in an urban area (either Bla town or Sikasso) is positively associated with delivery at either a public or private health facility. Because of the relatively poor infrastructure like roads and clinics in rural areas in most African countries, we expect that the levels of use of maternal health care services among women will be generally lower in rural areas compared to those of women in urban areas.

2.5 Summary of Chapter

The literature has shown various factors that account for the differentials in the use of maternal health services especially prenatal and skilled delivery services between urban and rural women. In all the literature that was reviewed, little is known about the differentials in Ghana and the Northern region in particular. This is due to the nonexistent research conducted in this area. The findings of this study will therefore bridge the gap or provide information to ascertain these factors whether they apply to Ghana and the study area.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter covers a description of the different methods and steps undertaken by the investigator for the study. It includes the design, variables, setting of the study, population, sample and sampling techniques, development of the data collection tool, content validity, pre-testing of the tool, pilot study and plan for data analysis.

3.1 Study Design

A comparative cross sectional study was conducted in the Tamale Metropolis and the Nanumba North district which are located in the Northern region. A comparative approach was chosen because the study was focused on assessing the uptake of skilled delivery services among Nanumba North District and Tamale Metropolis women.

3.2 Determination of the Sample Size

The sample size for the study was estimated using the two sample formula as follows:

$n = D\,[(Z\alpha+Z\beta)^2*(P1\,(1-P1)+P2\,(1-P2)/\,(P2-P1)^2]$

n= required minimum sample size per district

D=design effect (assumed in the following equations to be the default value of 2)

P1=the estimated prevalence or rate of skilled delivery services utilization in the rural areas.

P2=the expected level of utilization of skilled delivery services (68.2 per the MICS (2011) for urban areas

$Z\alpha$= the Z – score corresponding to the degree of confidence with which it is desired to be able to conclude that an observed difference between the study arms (P2- P1) would not have occurred by chance

$Z\beta$=the Z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size (P2- P1)

$Z\alpha$ and $Z\beta$ have "standard" values depending on the reliability desired. These are provided below;

Value of $Z\alpha$: significance criteria "0.05" (95% confidence level) = 1.960

Value of $Z\beta$: Statistical power 80%, Z power value = 0.842

Thus $n = 2[(1.960+0.842)^2*(0.532(1-0.532) +0.682(1-0.682)/ (0.682-0.532)^2]$

$n=330.1953 \approx 330$

A sample size of 660 (330 per study area) study participants was therefore used in order to have an 80% power of detecting a significant difference of 15% in the primary outcome measure between the urban and the rural groups at 95% confidence interval , and assuming a correction factor of 2 (the "design effect") for cluster sampling. A provision of 10% of total sample size (66) was also considered to take care of incomplete/damaged questionnaires and this increased the sample size to 726. However, 720 women were interviewed due to some non-responses from the participants.

3.3 Study Population and Sampling

The study population comprised postpartum women who had delivered within the last three months prior to the study. Cluster sampling was used to extract the study population as described in section 3.3.1.

3.3.1 Selection of the Communities/Clusters

The study was conducted in 30 communities each from the Tamale Metropolis and the Nanumba North District. The communities were selected using Probability Proportional to Size (PPS). By this method, the lists of all the communities in the two study areas were compiled with their corresponding populations. The cumulative populations of the communities were also calculated. The sampling interval was calculated by dividing the cumulative population by the number of clusters or communities (Sampling interval = Cumulative population/ number of clusters).

A random number which is equal to or less than the sampling interval was selected. The first cluster was located by finding the community whose cumulative population exceeded this random number. To select the second cluster, the sampling interval was added to the random number earlier selected. The community whose cumulative population just exceeds this number was then chosen. The second cluster was located in this community. The subsequent clusters were selected by adding the sampling interval to the number which located the previous cluster. The procedure was repeated until all the clusters were chosen.

3.3.2 Selection of the Households of Respondents

The respondents from the Tamale Metropolis were selected from the Tamale township. The Tamale township has already been demarcated by the Ghana Health Service for immunization programmes. The demarcation set out by the Ghana Health Service was therefore adopted by this study in selecting the households. All the communities in the Nanumba North District were considered for inclusion in the study. To locate the first household in each of the communities, the investigator chose a starting location by going to a central location in the cluster. At the centre of the cluster, a travel direction was selected at random by spinning a pen. The investigator then moved in a straight line in a chosen direction and counting all of the households

until the end of the community or cluster was reached. The investigator then randomly chose a number between 1 and the number of houses counted as the starting point for the survey. The number randomly chosen therefore corresponded with the starting house.

3.3.3 Selection of Subsequent Households

Households have been numbered by the Ghana Health Service for the purposes of immunizations. This numbering system was used by this study in the two study areas. Every fourth household from the previously selected household formed the basis of selecting respondents for interview. This approach was to ensure that there were variations in the responses of the respondents.

3.3.4 Selection of Individual Respondents

Three months postpartum mothers who were living in sampled houses were interviewed. In houses where there were more than two mothers who met the inclusion criteria, only one of them was selected for the interview. The mother with the youngest child in the house was interviewed. This was to minimize recall bias.

3.3.5 Inclusion Criteria

The respondents were included in the study if they met the following criteria;

i. If they delivered within the past three months prior to the study
ii. If they were willing to take part in the study
iii. If they were either living in the Tamale Metropolis or the Nanumba North District.

3.4 Data collection

The study used both quantitative and qualitative methods of data collection. The quantitative data included the socio-demographic characteristics of the respondents, maternal history of ANC utilization, knowledge of complications in labor, use of skilled delivery services, household decision making issues and household wealth index. Structured questionnaire was designed which was used to interview the mothers.

To obtain a wealth of detailed information and deep insight into real life situation in capturing the reality from the study population, focus group discussions were used to gather qualitative data according to some selected topics or themes of interest which were relevant to the study. These areas include benefits of skilled or facility delivery, barriers to accessing skilled delivery services, factors or determinants of uptake of skilled delivery services, male contribution to uptake of skilled delivery services and ways to improve the uptake of skilled delivery services among pregnant women in the study districts.

The findings of the focus group discussions were arranged according to these topics or themes and linked to the results of the quantitative results. In all six focus groups were organized for three months postpartum women in both study areas with three groups in each of the study areas. One focus group discussion was done in every ten communities covered. Participants were randomly selected based on willingness to participate.

3.4.1 The dependent and Independent variables

The main outcome measure (dependent variable) was uptake rate of skilled delivery services. The independent variables were:

- Geographic access (distance to nearest health facility)

- Maternal autonomy in taking decisions that affect her health
- Utilization of antenatal care services and quality of antenatal care services
- Socio-demographic characteristics including age of mother, parity, educational background of mothers and household wealth index.

3.4.2 Quality Control Measures

Reliability is the degree of consistency that the instrument of procedure demonstrates whatever it is measuring it does so consistently. In order to establish the reliability of the tool the Cronbach's alpha was calculated. This was found to be 0.8622 which is high and closer to 1. This represents a higher internal consistency of the variables or scale.

Training: There was a training session for the research assistants who assisted in the data collection to ensure that valid and reliable data were collected. The training gave the data collectors much insight into the questionnaires and what it sought to achieve.

Pre-testing of questionnaires: Pre-testing of the tool was done to check clarity of items, ambiguity of the language and feasibility of the tool. Formal permissions were obtained from the concerned authorities. The structured items were administered to three months postpartum mothers who were selected by probability sampling methods. The time taken by each respondent to answer the questions varied from 20-30 minutes. The tool was found to be clear feasible and there was no ambiguity in the language

Double entries of data: The quantitative data was entered by two persons after which the two data sets were compared to check inconsistencies in the data.

3.5 Data Analyses

Data from the structured questionnaires was coded and entered into Statistical Package for Social Sciences (SPSS version 20.0) for analysis. Both bivariate and multivariable analyses were performed to find the factors or determinants of the use of skilled delivery services.

In both bivariate and multivariate analyses, P-values were considered statistically significant when $P< 0.05$. Chi square values were used to test the association between categorical variables and the uptake of skilled delivery services.

The focus group discussions were recorded and the tapes transcribed. Content and thematic analyses were performed to the themes of the interviews.

3.6 Study Area

The study was conducted in two different settings thus a Metropolis and a District. The study settings are briefly described below.

3.6.1 Nanumba North District

Nanumba North District was created as a separate district in 2004 under LI 1754 of Ghana when the then Nanumba District was split into two – North and South. It covers an area of 1,986 sq km. It is found in the eastern part of the Northern Region and lies between latitudes 8.5° N and 9.25° N and longitude 0.57° E and 0.5° E. It shares boundaries with Yendi Municipal to the North; East Gonja to the West and South-West; Nanumba South to the south and East and Zabzugu-Tatali to the North-North-East.

The current projected population of the District using the 2.7% annual rate of growth on the 2000 PHC figure of 88,910 is 113,094 (2009). The ratio of male to female is 49.4 to 50.6 and the

population is basically youthful with about 56.2% between 0-19 years. However, a provisional figure from the PHC 2010 gives the population as 149915.

According to the ISSER household survey 2008, Konkombas constitute 43.3%, followed by the Nanumbas who constitute 41.1%, Dagomba 9.8% with Akans and Hausas constituting 1.3%. The Konkombas who are mostly farmers reside in the rural areas where there is abundant land for farming whiles the Nanumbas are mostly in the urban settlements.

The District is predominantly agricultural with about 85.6% of the people engaged in the agriculture and forestry sector (source: 2000 PHC; Analysis of the District data and implication for planning-Northern Region). Out of the total land area of 173,459 hectares in the District, about 130,094 hectares representing 75% are agricultural lands. However, only 46,566 hectares representing 28% is under cultivation.

There are four health sub-districts with six facilities one of which is provided by the Catholic Mission in the District. There is currently a District hospital in Bimbilla. The District is span by 108km of trunk roads radiating from the District capital, Bimbilla and 80.8km of "maintainable" feeder roads. Others are farm tracks which are accessible during the dry season only. Bimbilla the District capital was hooked onto the national grid in March, 1998 and since then, six other communities have been connected to it.

3.6.2 Tamale

The Tamale Metropolitan Assembly (TaMA) was established under Legislative Instrument (L.I) 1801 of 2004. It is one of the six Metropolitan Assemblies in the country and the only Metropolis in the northern part of Ghana. TaMA has 3 sub metros comprising Tamale Central, North and South. The TaMA is one of the 20 districts located in the centre of the Northern Region and

shares boundaries with six other districts namely the Savelugu- Nanton to the north, Yendi Municipal Assembly to the east, Tolon-Kumbungu to the west, Central Gonja to the south west and East Gonja to the south. The Metropolis has a total estimated land size of 750 km sq which is about 13% of the total land area of the Northern Region. Geographically, the Metropolis lies between latitude 9°161 and 9° 341 North and longitudes 0° 361 and 0° 571 West.

The Metropolis lies within the Savannah Woodland Region in the country. The trees in this part of the country and for that matter the Metropolis are short scattered wood lots in nature. Major tree types are the Dawadawa, Nim, Acacia, Mahogamy, Baobab among others. There are naturally grown tall grasses during the rainy season that are used to make the local "Zanamat" in the Metropolis. The making of the Zanamat by most farmers during the dry season reduces the rural migration levels of the youth from the rural areas to urban centres. Besides, the only economic tree is the Shea tree which has gained international recognition. The picking, processing and marketing of the Shea nuts has engaged thousands of households in the Shea nut activities in the area. This activity has also contributed in employing the youthful population in the Metropolis thereby increasing household incomes and reducing poverty levels of the people in the area. Cashew is also grown in the Metropolis.

There are a lot of Small and Medium Scale Enterprises in the Metropolis that has led to a reduction in the high unemployment rates. About 42% of the working class are engaged in agriculture and related activities. Majority of the workforce representing 58% are engaged in Sales, Services, Transport and Production. This is as a result of the increase in Marketing, Banking and other Non- Governmental activities in the Metropolis.

The roads in the Metropolis are fairly good especially those that link the Metropolis to other district capitals. The tarred roads in the area facilitate easy commuting from one place to the other. Most of the farming and the Peri-urban communities are linked to the marketing centers by feeder roads.

The Metropolis has a Teaching Hospital and other Hospitals that provide health care services to the populace (Metropolitan Health Directorate, 2012).

CHAPTER FOUR

RESULTS

4.0 Introduction

The results of the study are presented in this chapter. Quantitative data are presented using descriptive and inferential statistics whilst qualitative data from the focus group discussions are presented in themes with some supporting statements from the discussants.

4.1 Socio-Demographic Characteristics of Respondents

Table 4.1 shows the socio-demographic characteristics of the respondents. The minimum age of respondents was 14 years with a maximum age of 45 years. The mean age of the study sample was 28.4 ± 7.7 years. Younger mothers were found in the Nanumba North District than the Tamale Metropolis. The proportion of mothers within the age group of 14-19 years was 52.9% (55) of the respondents in the Nanumba North as compared to 47.1% (49) of the respondents in the Tamale Metropolis. Older mothers within the age group of 41-45 years were more in the Tamale Metropolis than the Nanumba North thus 52.6% (20) versus 47.4% (18). Single mothers were more in the Nanumba North than in the Tamale Metropolis thus 57.1% (24) versus 42.9% (18). The reverse was also found by the study as more married mothers were found in the Tamale Metropolis than the Nanumba North thus 50.9% (340) versus 49.1% (328). With regards to the educational level, the proportion of respondents without any formal education was high in the Nanumba North than the Tamale Metropolis thus 56.6% (294) versus 43.4% (225). Only 27.8% (10) of the respondents in the Nanumba North were educated to the tertiary level whilst 72.8% (26) of the respondents in the Tamale Metropolis were educated to the tertiary level. Muslims

formed the majority of the study sample with 50.4% (205) in the Tamale Metropolis and 49.6% (202) in the Nanumba North District.

Table 4.1 Socio demographic characteristics of respondents

Variable	Tamale Metropolis	Nanumba North District
	Frequency (n=360)	Frequency (n=360)
Age		
14-19 years	55 (52.9)	49 (47.1)
20-30	138 (50.4)	136 (49.6)
31-40	147 (48.4)	157 (51.6)
41-45	20 (52.6)	18 (47.4)
Marital status		
/Single	18 (42.9)	24 (57.1)
Married	340 (50.9)	328 (49.1)
Divorced	1 (16.7)	5 (83.3)
Widowed	1 (25.0)	3 (75.0)
Educational level		
No formal education	225 (43.4)	294 (56.6)
Basic	74 (61.7)	46 (38.3)
Secondary	35 (77.8)	10 (22.2)
Tertiary	26 (72.2)	10 (27.8)
Religion		
Islam	205 (50.4)	202 (49.6)
Christianity	149 (62.6)	89 (37 (.4)
ATR	6 (8.0)	69 (92.0)

4.2 Occupational Distribution of Respondents

An assessment of the occupations of the respondents showed that unemployment was high in the Tamale Metropolis than the Nanumba North thus 74.2% (23) versus 25.8% (8). There were more farmers in the Nanumba North District than the Tamale Metropolis (56.5% versus 43.5). However, more civil/public servants were found in the Tamale Metropolis than the Nanumba North thus 72% (18) versus 18% (8) as shown in table 4.2 below.

Table 4.2 Occupational distribution of respondents

Occupation	Tamale Metropolis	Nanumba North District
Farmer	244	317
Civil/Public servant	18	7
Petty trader	75	28
Unemployment	23	8

4.3 Maternal ANC History

The mean number of children of respondents was 2.8 ±1.8. There was no significant difference in the number of children given birth to among the respondents in the Tamale Metropolis and Nanumba North District.

There were significant disparities between the two groups of women in the number of ANC visits, timing of first visit and content of ANC visits. The mean number of ANC visits during pregnancy for Nanumba North pregnant women was 3.4 (95% CI: 3.2–3.5), compared to 3.5 (95% CI: 3.4–3.7) for Tamale Metropolis women. The results showed that Tamale Metropolis women made more ANC visits than Nanumba North women. About 48.6% (175) of the Tamale Metropolis women made 4 plus ANC visits compared to 37.5% (135) of the Nanumba North women who made the 4 plus ANC visits. As shown in Table 4.3, the time of ANC initiation among the respondents differed slightly in Nanumba North and Tamale Metropolis women. Majority of the Tamale Metropolis women who represented 99.4% (358) initiated ANC in the first trimester of pregnancy as compared to the 97.5% (351) of the Nanumba North women (Fisher's Exact Test = 4.5, P = 0.03).

Tamale Metropolis and Nanumba North areas were not different regarding providers of delivery care. The presence of skilled birth attendants (that is, doctors, midwife) during delivery was 95(26.4%) in Nanumba North compared with 105(29.2%) in the Tamale Metropolis.

Table 4.3 ANC history and parity of respondents (n = 720)

Variable	Nanumba North n (%)	Tamale Metropolis n (%)	Test Statistic
Time ANC was first Initiated			
First trimester	351 (97.5)	358 (99.4)	Fisher's Exact Test = 4.5, p = 0.03
Second trimester	9 (2.5)	2 (0.6)	
Frequency of ANC visits			
1-3	225 (62.5)	185 (51.4)	Chi-squared = 9.1, p = 0.003
At least 4 visits	135 (37.5)	175 (48.6)	
Place of delivery of youngest child			
Home delivery	210 (58.3)	185 (51.4)	Chi-squared = 3.5, p = 0.06
Health institution delivery	150 (41.7)	175 (48.6)	
Parity			
1-2	176 (48.9)	194 (53.9)	Chi-squared = 1.8, p = 0.4
3-4	117 (32.5)	106 (29.4)	
More than 4	67 (18.6)	60 (16.7)	
Presence of skilled birth attendant			
Yes	95 (26.4)	105 (29.2)	Chi-squared = 0.7, p = 0.4
No	265 (73.6)	255 (70.8)	

4.4 Content of ANC Services

The services received by the respondents during ANC visits were assessed by this study. The results show that urine examination, blood examination, health talk and palpation were done almost at the same rate for Tamale Metropolis and Nanumba North pregnant women. There were no significant differences in the percentage of pregnant women who received these services in the Tamale Metropolis and Nanumba North as shown in Table 4.4.

Services such as scan and malaria prophylaxes differed among Nanumba North and Tamale Metropolis women. The results show that 52.4% (292) of the respondents in the Tamale Metropolis took all the three SP doses during pregnancy whilst 47.6% (265) of the women in the Nanumba North took all the required SP doses whilst pregnant. About 92.7% (38) of the Tamale Metropolis women took a scan of their pregnancy as compared to the 7.3 % (3) of the Nanumba North women who took scan of their pregnancy. Table 4.4 shows the ANC services received by the women.

The content of prenatal care services was also quantified using five variables. These included the assessment of whether or not the following procedures were undertaken during the antenatal visits: woman received palpation (1 mark for each assessment), samples of urine and blood taken (2 marks), woman received health and nutrition education sessions (1 score), SP taken in the presence of a health worker (1 score). Omission of any procedure was scored as zero. The maximum score was therefore five. Scores in the range of 0-4 were classified as "poor/inadequate content" and receiving all services, as "good/adequate content". There was no significant difference between Nanumba North and Tamale Metropolis women in terms of content of ANC services received (48.6 versus 54.2 %) (Chi-squared = 2.2, p = 0.14).

Table 4.4 ANC services received by pregnant women

ANC service	Nanumba North n (%)	Tamale Metro n (%)
Urine examination		
Yes	341 (50.1)	339 (49.9)
No	19 (47.5)	21 (52.5)
Blood examination		
Yes	351 (50.1)	350 (49.9)
No	9 (47.4)	10 (52.6)
Scan taken		
Yes	3 (7.3)	38 (92.7)
No	357 (52.6)	322(47.4)
Health talk		
Yes	360 (50.0)	360 (0.0)
No	0 (0.00)	0 (0.0)
Malaria Prophylaxis		
Yes	265 (47.6)	292 (52.4)
No	95 (58.3)	68 (41.7)
Palpation		
Yes	261 (49.8)	263 (50.2)
No	99 (50.5)	97(49.5)

4.5 Uptake of Skilled delivery Services

The proportion of Tamale Metropolis women who delivered in health facilities was higher than that of Nanumba North women (53.8% versus 46.2%). Interestingly, a comparison of women who delivered at home without the help of anybody was 46% among Tamale Metropolis women but 54% among Nanumba North women. TBAs also conducted some deliveries in both the Tamale Metropolis and Nanumba North District. The proportion of births conducted by TBAs in the Nanumba North was 51.9% (67) versus the 48.1% (62) of births conducted by TBAs in the Tamale Metropolis.

Most of the women who did not deliver at the health facility planned to deliver at home with majority of them living in Nanumba North District as compared to those in the Tamale Metropolis thus 51.8% (144) versus 48.2% (106). Most of the births in the Tamale Metropolis were conducted by medical doctors and midwives as compared to that of the Nanumba North (54% versus 46%). Table 4.5 below shows the uptake of skilled delivery services among respondents.

Table 4.5 Uptake of skilled delivery services among the respondents

Place of delivery	**Nanumba North**	**Tamale Metropolis**
Home-self	143 (54)	122 (46)
Home TBA	67 (51.9)	62 (48.1)
Home SBA	0 (0.0)	1 (100.0)
Health facility	150 (46.2)	175 (53.8)
Planned Home delivery		
Yes	144 (51.8)	106 (48.2)
No	83 (55.3)	67(44.7)
Not applicable	163 (46.6)	187 (53.4)
Birth Attendant		
Self/ no attendant	101(69.7)	44 (30.3)
Doctor/midwife	150 (46.0)	176 (54.0)
Mother in-law/relative	42 (35.0)	78 (65.0)
TBA	67(51.9)	62 (48.1)

4.6 Reasons for Home Delivery

The study found that majority of the people who delivered at home both in the Tamale Metropolis and Nanumba North had no difficulty in their previous deliveries which encouraged them to deliver at home. This was found to be 51.4% among Nanumba North women but 48.6% among Tamale Metropolis women. Transportation difficulties were the most significant determinant of home delivery among women in Nanumba North thus 94.7% (125) as compared

to 5.3% (7) in the Tamale Metropolis. All the women in both Nanumba North and Tamale Metropolis feared caesarean delivery which was one of the reasons for home delivery. The proportion of Tamale Metropolis women who did not deliver in health facility for the fear of caesarean delivery was 46.5% (20) compared to the 53.5% (23) of the Nanumba North women. The effect of high cost of delivery pack was similar in both Tamale Metropolis and Nanumba North as 53.5% of the women in Tamale Metropolis did not deliver in health facility because of high cost of delivery pack compared to the 46.5% (76) of the Nanumba North women. Table 4.6 below shows the reasons for home deliveries in both rural and urban settings.

Table 4.6 Reasons for home delivery

Reason	Nanumba North	Tamale Metropolis
No difficulty in previous delivery		
Yes	107 (51.4)	101 (48.6)
No	9 (56.2)	7 (43.8)
Not applicable	230 (51.5)	216 (48.5)
Transport difficulties		
Yes	125 (94 .7)	7 (5.3)
No	10 (6.7)	140 (93.3)
Not applicable	230 (51.5)	216 (48.5)
Fear of ceasarean delivery		
Yes	23 (53.5)	20 (46.5)
No	112 (46.9)	127 (53.1)
Not applicable	230 (51.5)	216 (48.5)
Preferred delivery position		
Yes	23 (53.5)	20 (46.5)
No	112 (46.9)	127 (53.1)
Not applicable	230 (51.5)	216 (48.5)
Lack of privacy		
Yes	15 (57.7)	11 (42.3)
No	120 (46.9)	136 (53.1)
Not applicable	230 (51.5)	216 (48.5)
Cost of delivery pack		
Yes	73 (46.5)	84 (53.5)
No	62 (49.6)	63 (50.4)
Not applicable	230 (51.5)	216 (48.5)
Attitude of nurses		
Yes	10 (47.6)	11 (52.4)
No	125 (47.9)	136 (52.1)
Not applicable	230 (51.5)	216 (48.5)

4.7 Quality of skilled delivery services in the Tamale Metropolis and the Nanumba North District

The quality of skilled delivery services in the districts was assessed by the study. The parameters that were used in assessing this were clients' satisfaction with the service and their rating of the

services they received. Service quality was found to be poor in Nanumba North as it was reported by 65% (26) of the respondents who delivered in health facilities. Compared to Nanumba North, women who delivered in health facilities in Tamale Metropolis received excellent services (Table 4.7).

With regards to satisfaction with the skilled delivery services, Nanumba North women reported to be more dissatisfied with the services than Tamale Mteropolis women (77.8% (21) versus 22.2% (6). On the other hand, Tamale Metropolis women were very satisfied with the services they received from the health facilities than Nanaumba North women (75% versus 25%). Table 4.7 below shows the quality of services received.

Table 4.7 Quality of skilled delivery services

Variable	Nanumba North n (%)	Tamale Metropolis n (%)
Quality of service		
Poor	26 (65.0)	14 (35.0)
Fair	50(71.4)	20 (28.6)
Good	18	75
Excellent	2(7.7)	24(92.3)
Indifferent	39	16
Not Applicable	230 (51.5)	216(48.5)
Satisfaction with service		
Dissatisfied	21(77.8)	6(22.2)
Satisfied	71(56.8)	54(42.2)
Very satisfied	25(25.0)	75 (75.0)
Indifferent	18(56.2)	14(43.8)
Not applicable	230 (51.5)	216 (48.5)

4.8 Perceived Factors that Influence Non-Delivery in Health Facility

An assessment of the factors that will make a woman not to deliver in a health facility was made by this study. The institutional level factors perceived as barriers to delivering at health facilities

included negative staff attitude and lack of privacy in the labor wards, not being allowed to deliver in the **preferred position**. The most frequently cited reason for not delivering in health institution in the Nanumba North was **fear of caesarean delivery** but in the Tamale Metropolis **slow response of nurses** and **lack of privacy** were given for non-patronage of health.

The uptake of skilled delivery services by Nanumba North and Tamale Metropolis women was found to be influenced by the high cost of delivery pack (50.8% versus 49.2%). This shows that both Nanumba North women and Tamale Metropolis women have a difficulty in acquiring delivery pack.

The fear of being abused by nurses was also found to be an institutional factor that influences Tamale Metropolis and Nanumba North women to take skilled delivery services. Nanumba North women feared that they would be abused by nurses during delivery than Tamale Metropolis women (49.1% versus 50.1%) as shown in table 4.8 below.

Table 4.8 Perceived barriers to utilization of health facilities for skilled delivery services among Nanumba North District and Tamale Metropolis women

Variable	Nanumba North n (%)	Tamale Metropolis n (%)
High cost of delivery pack		
Yes	306 (49.2)	316 (50.8)
No	54 (55.1)	44 (44.9)
Fear of being abused		
Yes	106 (49.8)	107 (50.2)
No	254 (50.1)	253 (49.9)
Slow response of nurses		
Yes	89 (49.9)	93 (51.1)
No	271 (50.4)	267(49.6)
Preferred delivery position		
Yes	95 (49.7)	96 (50.3)
No	265 (50.1)	264 (49.9)
Fear of caesarean delivery		
Yes	111 (50.9)	107 (49.1)
No	249 (49.6)	253 (50.4)
Presence of male staff		
Yes	0	0
No	360 (50.0)	360 (50.0)
Lack of privacy		
Yes	46(47.4)	51 (52.6)
No	314 (50.4)	309 (49.6)

4.9: Determinants of Place of Delivery (Bivariate Analysis)

The coverage of health facility utilization for childbirth was 45.1 % (325) in the whole sample. Coverage of health facility deliveries was higher in Tamale Metropolis than Nanumba North (48.6 % versus 41.7 %) although the difference was not statistically significant (Chi-squared = 3.5, p = 0.06).

In a bivariate analysis, frequency of ANC attendance, distance to the nearest health facility, maternal age, parity, socio-economic status (high household wealth index), place of residence,

educational level of women, and high maternal autonomy were the main predictors of health institutional deliveries. Comparatively older women and multiparous women were more likely to give birth in hospitals than younger women (Tables 4.9a).

Table 4.9a: Predictors of place of delivery (Bivariate analysis)

Variable	N	Place of delivery of recent child		Test statistic
		Home n (%)	Health facility n (%)	
Frequency of ANC attendance				
1-3 times	410	298 (72.7)	112 (27.3)	Chi-square (χ^2) = 122.1 , $p < 0.001$
At least 4 times	**310**	97 (31.3)	213 (68.7)	
Type of residence				
Nanumba North	360	210 (58.3)	150 (41.7)	Chi-square (χ^2) = 3.5 , p = 0.06
Tamale Metropolis	360	185 (51.4)	175 (48.6)	
Parity				
1-2	370	243 (65.7)	127 (34.3)	Chi-square (χ^2) = 39.3 , $p < 0.001$
3-4	223	105 (47.1)	118 (52.9)	
More than 4	127	47 (37.0)	80 (63.0)	
Age (years)				
Less than 25	250	176 (70.4)	74 (29.6)	Chi-square (χ^2) = 46.8 , $p < 0.001$
25-34	351	178 (50.7)	173 (49.3)	
≥35	**119**	41 (34.5)	78 (65.5)	

Delivery in health institutions was also more common among highly educated women, women living in wealthy households and women of high autonomy (Table 4.9b).

Table 4.9b: Predictors of place of delivery (Bivariate analysis)

Variable	N	Place of delivery of recent child		Test statistic
		Home n (%)	Health facility n (%)	
Education				
None	519	303 (58.4)	216 (41.6)	$(\chi^2) = 10.1$, $p < 0.006$
Low	120	58 (48.3)	62 (51.7)	
High	81	34 (42.0)	47 (58.0)	
Household Wealth index				
Low	402	238 (59.2)	164 (40.8)	$(\chi^2) = 6.9$, $p = 0.008$
High	318	157 (49.4)	161 (50.6)	
Knowledge of at least three danger signs in pregnancy				
No	**136**	83 (61.0)	53 (39.0)	$(\chi^2) = 2.6$, $p = 0.1$
Yes	**584**	312 (53.4)	272 (46.6)	
Distance to nearest health facility				
1-3 km	**167**	32 (19.2)	135 (80.8)	$(\chi^2) = 111.9$, $p < 0.001$
At least 4 km	**553**	363 (65.6)	190 (34.4)	
Women Autonomy				
Low tercile	**387**	240 (62.0)	147 (38.0)	$(\chi^2) = 17.3$, $p < 0.001$
High tercile	**333**	155 (46.5)	178 (53.5)	

4.9.1 Determinants of Place of Delivery (Multivariate Analysis)

Analyses were made to compare the main determinants of uptake for skilled delivery services in Nanumba North District and Tamale Metropolis. The determinants of health facility deliveries were not exactly the same in the Tamale Metropolis and Nanumba North. The results showed that in the Nanumba North, socio-economic status as measured by household wealth index was not an important predictor of utilization of health institutions for birth. The frequency of ANC attendance, parity, distance from health facility, and women autonomy were strong determinants of skilled supervised delivery in the Nanumba North (Table 4.9.1a). The set of predictors of institutional delivery in Nanumba North accounted for 55 % of the variance in uptake for skilled delivery services (Nagelkerke R Square = 0.551).

In the Nanumba North, women who attended ANC at least four times were 15.6 times more likely to deliver in a health institution, compared to women who attended for less than 4 times (AOR= 15.63, 95 % CI [8.16, 29.95]). Women who were far from health facility (> 4 km) were 85 % protection against patronizing institutional delivery services (AOR= 0.15, 95 % CI [0.07, 0.29]).

Women of high parity (> 4) were 11 times more likely of delivering in a health facility, compared to women of lower parity (1-2) (AOR= 11.21, 95 % CI [4.56, 27.58]). Women of high autonomy (economic independence, decision making, freedom of movement) were 3.4 times more likely of delivering in a health facility, compared with women of low autonomy (AOR= 3.44, 95 % CI [1.85, 6.39]).

However, results for the Tamale Metropolis showed something different. Maternal autonomy and parity were not important predictors of utilization of health facility for child birth. Four plus

ANC attendance was also a predictor of health facility delivery than attendance less than four visits in Tamale Metropolis. Surprisingly, women of high household wealth index were less likely of delivering in a health facility in the Tamale Metropolis (Table 4.9.1b). The set of predictors of institutional delivery in Tamale Metropolis accounted for 33 % of the variance in uptake for skilled delivery services (Nagelkerke R Square = 0.328).

Table 4.9.1a: Independent predictors of health facility delivery (Nanumba North District)

	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
				Lower	Upper
ANC visits of at least 4 times	68.654	<0.001	15.63	8.16	29.95
Parity (Reference: 1-2)	29.349	<0.001			
3-4	14.421	<0.001	3.87	1.93	7.79
> 4	27.693	<0.001	11.21	4.56	27.58
High women Autonomy	15.252	<0.001	3.44	1.85	6.39
Distance (At least 4 km)	29.940	<0.001	0.15	0.07	0.29
Constant	12.386	<0.001	0.21		

Table 4.9.1b: Independent predictors of health facility delivery (Tamale Metropolis)

	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
				Lower	Upper
ANC visits of at least 4 times	28.86	<0.001	3.78	2.325	6.13
Distance (At least 4 km)	45.14	<0.001	0.06	0.02	0.13
High Wealth Index	8.50	0.004	0.43	0.25	0.76
Constant	19.89	<0.001	7.44		

Information from Focus Groups Discussions (FGDs)

4.9.2 Barriers to the Uptake of Skilled Delivery Services

Analysis of the data from quantitative arm of the study showed that most pregnant women in the Nanumba North do not initiate ANC early in pregnancy as compared to their counterparts in the Tamale Metropolis. The results of the qualitative data corroborated these findings as most of the Nanumba North women did not start ANC in the first trimester of pregnancy. Some of the statements of the Nanba North women to buttress this assertion are;

...."because the distance to the nearest health facility is far so I didn't start ANC early. I was not sick so I did not find the need to go to the health centre for any care"...

..."I was not sick in my pregnancy period so I didn't make any effort to go for ANC early. I only started it when the pregnancy was 5 months old and the baby started giving me problems while in the womb. I therefore visited the hospital to check whether the child was in the correct position in the womb".....

..."as for me, I only go to the health facility when I am not feeling well in my pregnancy period. I have given birth to four children and this is my fifth pregnancy, I have never started ANC in the first three months. That is my normal practice but I don't develop any complication during delivery. I deliver with ease".....

...."sometimes your husband will not give you money to go to hospital until you are seriously sick. I don't also have my own money to board a car to go to the hospital".....

Data of this study also revealed that majority of the Nanumba North women delivered their last/latest child at home. Even though the attendance of antenatal care was universal and all the women in the study attended ANC there were still some barriers to accessing skilled delivery services in the study areas. Some of the Tamale Metropolis women also delivered their latest child at home. The challenges facing both Tamale Metropolis and Nanumba North women were almost the same with the exception of the unavailability of health facilities and the far distance which most of the Nanumba North women had to travel before accessing health care.

In probing to find out these barriers and challenges to accessing skilled delivery services, these were the findings;

Lack of health facilities in the communities: Majority of the women living in Nanumba North who took part in the focus group discussions said that they did not deliver at health facility because there are no health facilities in their communities and the distance to the nearest health facility is too far for a woman in labour to travel.

These are some of the statements of these women to that effect;

……"I did not plan to deliver at home but we don't have health centre in this community and the distance to the nearest health facility is more than 10 kilometres. The road is also not good to travel on when you are seriously sick. There are no cars to send you to the hospital. When someone is sick the relatives have to hire a motorbike or tricycle to send him/her to the hospital. The road is too bad to travel on when you are sick. How much more when you are in labour? This is the reason why we deliver at home……

……"no woman wants to deliver and have complications or lose her life. We know there are dangers associated with home delivery but there is nothing you can do about it because there is

no health facility in this community. Labour comes when you are not prepared and you cannot control it.

"the only means of travelling in this community is the motor bike, so it is very difficult to travel to a health facility to deliver when you are in labour because you can't sit on a motorbike when you are in labour"

The men who took part in the focus group discussions also confirmed the assertion by the women that distance and unavailability of health facilities as a hindrance to facility delivery. Some of their statements include;

……."anytime a woman is in labour in this community, because of the far distance to the health facility we use motorbikes to carry the person to the health centre. Sometimes we use bicycles when the situation becomes very serious"……

……."my wife delivered her first child on her way to a health facility when she was in labour. We covered about 5 kilometres and she delivered on her way"……

……."there are so many difficulties we the men face in carrying a pregnant woman to a health facility when she is in labour. She cannot sit on a bicycle when she is in labour especially on a bad road like this. We don't also have a passenger car in this community except on market days so that is why women deliver at home"……

High cost of delivery pack: Women who deliver in health facility are supposed to buy a delivery pack which is made up of soap, antiseptic, white bed sheets and toilet rolls. This was found to be a hindrance to facility delivery. These are some statements to that effect;

……"nurses usually ask pregnant women to bring detol, Geisha soap, white bed sheets, blades and toilet rolls. It is our husbands who are supposed to buy these items for us to deliver in health facilities but they don't have money to buy them. It is also embarrassing for you to go to a health facility without these items."……

……"anytime you want to deliver in health facility, nurses ask for Detol and Geisha soap. They don't want any other soap or antiseptic apart from these ones. Meanwhile we don't have money to buy these items

The men also stated that the materials requested by nurses are too many and therefore expensive. These are some of their statements;

……"when my wife was admitted to deliver at the hospital, I was made to buy so many items such as bed sheets, soap, detergents and toilet rolls. At times you have to go and borrow money from friends to pay your wife's hospital bills"……

Poor attitude of nurses towards clients: Nurses attitude towards women who come to deliver at health facilities was cited as one of the barriers militating against facility delivery. Some of the women complained that they are not treated with some modicum of respect when they go to the health facilities. This unfriendly act of nurses prevents women from taking maternal health services. These are some of their statements to support it;

……"young nurses are the people who prevent women from delivering in health facilities because of the way they insult. They talk to clients as if they are not human beings. They shout on you, they are not polite in treating patients. Meanwhile some of them are our children's age mates. I don't want to be insulted and disgraced so I deliver at home"……

……."when I went to deliver my first child at the hospital, the midwife told me that she didn't impregnate me so I shouldn't cry to disturb her peace. When I was having sexual intercourse with my husband I didn't call her"……..

……."when you come to deliver you make yourselves so dirty and smelly because you don't bath well. You don't shave your private parts. This is an act of villagers. So why should I allow myself to be insulted by a nurse like this?... I will rather choose to deliver in the house than to go to the hospital and be insulted"……..

……." One of the nurses slapped me when I was in labour. She slapped my face but I just kept my temper under control because I have gone there to deliver. The next time if I don't go there again will she get me to slap?".....

……."a midwife made me to jump for a long time when I was in labour. She beat up my hips and my child died in the womb when I delivered him. It was the nurse who killed the child"……

The men who took part in focus group discussions also made some statements to support what the women had mentioned. The following are some statements of the men;

…." Nurses don't have good behaviour, they insult everybody who goes to hospital especially women and children. This is one of the reasons why women feel shy to go to deliver at hospitals. They don't want their fellow women to insult them".....

……." a nurse once insulted me and my wife when she went to deliver because she said that my wife was not wearing new clothes. But in the village you can't afford to buy these clothes. The best way is to allow the woman to deliver at home"……

Ease or no difficulties in delivery: Some of the women admitted that sometimes home deliveries are not planned or intentional. They deliver at their least expectation so you cannot go to a health facility. These are some of their statements:

……"I was stirring "Tuo-Zaafi" in the afternoon when I experienced something like a wave moving through my abdomen. I just got up from the stool on which I was sitting and entered the bathroom to check underwear. Spontaneously or instantly I felt that the baby was dropping from my vagina. I then called my mother in-law and she helped me to deliver in not more than 10 minutes"……..

…." I spent two days each in labour when I was delivering all my four children. For this reason I always deliver in hospital"…..

……"I delivered this baby on my way to the farm. I was feeling fine in the morning so decided to go to farm with my eldest child. We didn't reach the farm when I felt some strange pains in my abdomen. I just squatted to deliver the baby and sent my child to go back to the house and inform my mother. They came around and dressed me up and we all went back to the house"……..

……"we are real women, so we don't struggle to deliver because of the kind of food we eat. Any little push will bring the child out. We believe that no woman in this community will die through child birth"...

……."I delivered my child in the night; it was so simple and fast. I have given birth to 5 children and all of them were delivered at home. I go to hospital for antenatal care but I don't deliver at hospital because I don't experience difficult labour. I sometimes deliver without anybody helping or assisting me. That is a gift of God for me"

……."there are some women who have difficulty in delivering or prolonged labour. Anytime such women are in labour the whole community would hear of it and they must go to hospital to deliver. But for me, I have very short labour so why should I go to the hospital and deliver?"…..

The male discussants also asserted that some women don't deliver at hospitals or health facilities because they don't have prolonged labour. They made the following statements;

….."women in these communities are very strong and active so anytime they are in labour they deliver very fast. They are always active and help us on our farms so they don't fall sick even in their pregnancies unlike their counterparts who sit in offices. This is the reason why they don't find it necessary to go to the hospital to deliver because they can do it on their own without nurses"……..

……."I cannot remember the time a woman died in this community through labour or child bearing. It doesn't happen because our women are strong and deliver easily"……..

……."our mothers did not deliver us in hospitals but they didn't die and we are also well and strong. Our wives are following the footsteps of their mothers "……..

Preferred position of delivery: Some of the women mentioned this as a barrier to skilled delivery. Some stated that the lying position which midwives want to use and deliver is more hurting. These are some of their statements;

…. "hospital beds are very small for a woman who is in labour. She becomes restless and cannot lie at one place. The bed is too small for woman to lay and deliver on it. Nurses don't want women in labour to squat and deliver which is the easiest method because you can push with all your strength"……..

....." every woman in labour prefer to squat and deliver so that she can push harder for the baby to come out but nurses don't allow that. When you lie down to deliver it is prolonged and more painful. You cannot exert pressure on the thighs to force the child to come out. Nurses always want you to lie down quietly and be struggling with the labour"……

..."nurses always want you to obey their commands when you are in labour. They want you to be roaming or matching in the labour ward. But it doesn't help. Squatting is always better"...

Fear of caesarean session: Some of the women also mentioned the fear of going through a caesarean session when you want to deliver at a health facility. They made the following statements;

..."women who go to deliver in hospitals are likely to undergo a caesarean session. Any slight difficulty during labour will let the doctors do operation or surgery to help you deliver This is why most women are afraid to deliver in hospitals. It is very painful and will not help your health when you undergo caesarean delivery".....

....."people are always terrified when they hear that an ambulance or any car is taking a woman to hospital to deliver. Initially, most of the women who died through labour were brought back in an ambulance. This has made ambulance to be associated with death of pregnant woman or a seriously sick person"....

The male discussants also expressed the same fears;

……"any man whose wife is taken to the hospital to deliver has no peace of mind. You feel uncomfortable because she can lose her life, the child or may go through caesarean delivery

which is very expensive. As farmers we have no money even though there is health insurance there are other things or drugs which you have to buy"……

…."when your wife undergoes caesarean delivery, it becomes difficult for her to deliver safely again without going through the same caesarean section"….

4.9.3 Dangers of Home Delivery

Both the male and female discussants were not oblivious of the dangers of home deliveries. Some of the dangers that were espoused are stated below;

No medication available after delivery: In all the focus groups at the Nanumba North and Tamale Metropolis, it was mentioned that home deliveries can lead to death and other complications because no medication is given to the mother and her child if complications arise which can lead to maternal and infant mortality. Some of the statements to this effect include;

….."when you deliver at home and you fall sick immediately after the delivery you can die because there are no proper drugs for you to take. This can kill you and your child"…..

……"when I delivered my child at the hospital he was not breathing for about 1 hour but the nurses put some equipment through the nostrils and revived him. If it was to be home delivery, they would have buried the child because he was lifeless and not breathing"…..

……"when I delivered my child at the hospital, the midwife detected that there was excess fluid in my abdomen so it was drained and I became free"……..

……."when you deliver at the hospital and you have some abdominal pains they will give you drugs to treat it but in the house they will only boil water and massage you with it which is not effective"……..

……" Your child is given some immunization when you deliver in hospital but you won't get this when you deliver at home"……..

The men also alluded to the fact that there are dangers to home delivery. These are some of their statements;

……." When the woman is bleeding profusely after delivery it will be difficult to stop it in the house. Unless you take her to the hospital and if you are not lucky she can die on the way or when you delay the process"……

……." if the woman or the child falls sick immediately after delivery it becomes difficult to treat such cases with local herbs"……..

Placental retention: This was the most common danger mentioned by both the male and female discussants. These are some of their statements;

……."when I delivered my second child the placenta didn't come out. So they quickly arranged for a car to carry me to the hospital for treatment. This condition can kill you. Due to this past experience I don't deliver at home"……

……"the main problem with home delivery is when the placenta remains in you. One woman died out of this condition"

…."when a woman delivers at home and the placenta doesn't come out she can die out of it especially if she is not sent to the hospital very fast"

One of the men reiterated this point by saying that;

……."I lost my first wife through this condition, she delivered and the placenta did not come out. The old ladies tried to manage the condition but she couldn't survive it. The child also died after one month"……..

4.9.4 Ways to Improve the Uptake of Skilled Delivery Services

During the focus group discussions the discussants proposed some ways and measures to improve the uptake of skilled delivery services. These are stated below;

Provision of means of transport: Both the male and female discussants stated that lack of means of transport is a major factor for home delivery. Their statements include;

……."when you are in labour and you call the ambulance at the district hospital to come and carry you to the hospital they have a flat rate charge. You are charged 40 Ghana cedis and even if you deliver on the way or before the ambulance gets to your community you will still pay the fees"

……."if there is a vehicle to carry us to the hospital we will deliver in the health facilities. The problem is always with transport because your husband will have to hire a whole vehicle to take you to hospital to go and deliver. This is very expensive"……..

……."if you are to sit on a bicycle or motorbike to health facility to go and deliver it is very painful. We need a vehicle to carry women to hospital"……

Education of men on skilled delivery: The female discussants were very critical on the reluctance of their husbands when it comes to the issues of maternal and child health. Their statements include;

……"some men think that if you want to deliver at the hospital then you are ready to let him spend his whole money on you. They think that women deliberately want to waste their money at the hospital"……..

….."my husband told me that my colleagues have been delivering in the house why should I go to the hospital to deliver?"……..

….."when you are in labour and the issue of facility/hospital delivery is mentioned then your husband becomes angry with you as if you want to expose his poverty"……..

Change of attitude among nurses: The attitude of nurses if changed to the positive would encourage more women to go for skilled delivery services. Some of the statements of the discussants are;

…….."nurses should have patience for pregnant women who come to the health facilities to deliver. They should treat us like human beings and we will always go there to deliver"

……..."our nurses should understand the point that we cannot all be literates and can therefore not behave the same way. They should therefore treat us with respect when we come to the health centres to deliver"……..

……..."nurses should encourage us and pamper us when a woman goes to deliver so that she will come there the next time to deliver. If you don't treat the person with respect she may not come again to deliver at the health facility"……..

These were the views of the women and men who were interviewed. The content analysis was done by comparing the recorded tapes in all the communities before selecting the various themes.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

This study aims primarily to describe the utilization of delivery care services and to identify associated factors in Nanumba North District and Tamale Metropolis. There was low level of overall adequate utilization of ANC and delivery care services in both Nanumba North and Tamale Metropolis. The study results showed some amount of differences in ANC and delivery care utilization between the two areas. The main features of the results are discussed in this chapter. The discussion is done by comparing the findings with similar studies conducted by other researchers elsewhere.

5.1 Uptake of ANC Services in Urban and Rural Settings

There was low proportion of women who made at least four ANC visits during pregnancy and low patronage for institutional delivery in both Tamale Metropolis and Nanumba North. The study results showed a non-significant difference in utilization of health delivery care between the two areas.

It is recommended by the WHO that pregnant women should make at least four ANC visits in the entire duration of their pregnancy before delivery. Early initiation and adequate use of ANC services is good for maternal health and the health of the child in the womb. In this study, it was found that Tamale Metropolis women made more ANC visits than Nanumba North women. This may be due to the proximity to health facilities, availability of health personnel, quality of ANC services and individual factors such as high educational level and economic status. This is consistent with the findings of the Ghana Demographic and Health Survey (2008) that urban

women were more likely to make 4 plus visits than rural women. The GDHS (2008) found that nationally, 72% of rural women made the 4 plus ANC visits as compared to the 88% of urban women. The figures are higher than that obtained in this study where the proportion of women who made 4 plus ANC visits in the Tamale Metropolis was 48.6 % compared to 37.5% of the Nanumba North women. Generally, the Northern region performs poorly in all the health indicators (GDHS, 2009). This could be attributed to the poor road network which serves as a geographical barrier to accessing health facilities, low level of education and economic status and the lack of health personnel in some of the health facilities.

Initiation of ANC was found to be early among Tamale Metropolis women than Nanumba North women. This is consistent with the findings of the Multiple Indicator Cluster Survey (2011) conducted by UNICEF that about 70% of urban women initiate ANC in the first trimester of pregnancy whilst 28% of rural women were found to initiate ANC in the first trimester. Again, a study conducted by Hill et al (2007) in Uganda also found that use of maternal health services among rural women is low as compared to urban women. Only 34% of rural women were said to initiate ANC in the first trimester of pregnancy whilst 81% of urban women were found to initiate ANC in the first trimester.

The late initiation of ANC among Nanumba North women could be attributed to the unavailability of enough health facilities in Nanumba North which serves as a geographical barrier to access health care. Again, Tamale Metropolis women have access to private health facilities which are lacking in Nanumba North. Most Tamale Metropolis women have higher educational level and high economic status which are determinants of the use of health care services.

5.2 Content of ANC Services

The quality of antenatal care is measured to a large extent by the essential service package provided to pregnant women. The components of this package include prevention and management of anaemia and malaria, which are achieved through screening and appropriate management. Micronutrient supplementation, tetanus immunization, and monitoring of certain vital signs to help in the early detection and management of complications that may arise are also included in this important care package. The services received by the respondents during ANC visits were assessed by this study. Services such as scan and malaria prophylaxes differed among Nanumba North and Tamale Metropolis women. The results show that 52.4% of the respondents in the Tamale Metropolis took all the three SP doses during pregnancy whilst 47.6% of the women in the Nanumba North took all the required SP doses whilst pregnant. This is consistent with Adam et al (2011) who reported that rural women did not take all the SP dosage as compared to urban women. This is attributed to the fact that most Nanumba North women are not consistent with ANC attendance and are therefore likely to skip the periods they are supposed to take SP. About 92.7% of the Tamale Metropolis women took a scan of their pregnancy as compared to the 7.3% of the Nanumba North women who took scan of their pregnancy. This is consistent with the finding of Brundtland, (2002) who found that less than 10% of pregnant women living in rural areas in Kenya took scan of their pregnancy before delivery. This could be due to unavailability of equipment at the health centres.

5.3 Uptake of Skilled delivery Services

There were disparities in the use of skilled delivery services among Nanumba North and Tamale Metropolis women. There was a low patronage for institutional delivery in both Tamale Metropolis and Nanumba North. The study results showed a non-significant difference in

utilization of health delivery care between the two areas. The reason for this result is due to the general low usage maternal health care services in the Northern region. The region has consistently been reported to record low use of maternal and child health services. This could be attributed to vast arid land of the region leading to dispersed settlement which makes it difficult for the establishment of health facilities in communities. Access to health facilities is therefore a challenge.

The reports of MICS (2011) found that nationally, 88.2% of pregnant women in urban areas delivered in health facilities whilst 53.9% of pregnant women in rural areas delivered in health facilities. The findings of this study are consistent with this assertion because the study found that the proportion of Tamale Metropolis women who delivered in health facilities was 53.8% whilst that of Nanumba North women was 46.2%. These figures are lower than that of the MICS (2011) because the study was conducted in only the Northern region. The reason for the disparities could be attributed to the lower figures for the uptake of maternal health services in the entire Northern region. The afore mentioned reasons for the low uptake of maternal health care services still apply for this finding.

A comparison of women who delivered at home without the help of anybody was 46% among Tamale Metropolis women but 54% among Nanumba North women. The proportion of births conducted by TBAs in the Nanumba North was 51.9% versus the 48.1% of births conducted by TBAs in the Tamale Metropolis. Again, the GDHS (2008) established that 30% of deliveries in Ghana were conducted by TBAs. The MICS (2011) however found that 33% of births were conducted by TBAs in the Northern region. In this study, the proportion of births conducted by TBAs in both study areas was higher than the national and regional averages. Most of the women who did not deliver at the health facility planned to deliver at home with majority of them living

in Nanumba North as compared to those in the Tamale Metropolis thus 51.8% versus 48.2%. This is consistent with the findings of PPAG (2012) that most pregnant women in the three northern regions of Ghana intentionally decide not to deliver in health facilities, majority of whom are from the rural areas of the regions. Most of the births in the Tamale Metropolis were conducted by medical doctors and midwives as compared to that of the Nanumba North (29.2% versus 26.4) which is consistent with the findings of GDHS (2008) which reported that 59% of births in urban areas in Ghana are conducted by health professionals whilst the MICS (2011) reported that 67% of births in urban areas are conducted by skilled birth attendants.

The reasons for home deliveries varied markedly between Nanumba North and Tamale Metropolis dwellers. The results of this study showed that majority of the people who delivered at home both in the Tamale Metropolis and Nanumba North had no difficulty in their previous deliveries which encouraged them to deliver at home. This was found to be 51.4% among Nanumba North women but 48.6% among Tamale Metropolis women. This is consistent with the findings of Stephenson et al (2006) that women who delivered at home in Malawi had never experienced any obstetric complication in their previous deliveries which gave them the courage to continue to deliver at home in their subsequent pregnancies. Transportation difficulties were the most significant determinant of home delivery among women in Nanumba North. This corroborates the findings of studies conducted by AbouZahr et al (2008) and Bazzano et al (2008). Their studies found that women who stayed far away from health facilities were more likely to deliver at home than those who were closer to health facilities. This was due to difficulty in transportation and the bad road networks of their communities. All the women in both Nanumba North and Tamale Metropolis feared caesarean delivery which was one of the reasons for home delivery. The proportion of Tamale Metropolis women who did not deliver in

health facility for the fear of caesarean delivery was 46.5% compared to the 53.5% of the Nanumba North women. This finding is inconsistent with that of Bartlett et al (2005) in Afghanistan who found that fear of caesarean delivery was an insignificant determinant of skilled delivery among women in both urban and rural areas. Earlier studies conducted by the Chengxin (2005) in Tanzania and D'Ambruoso et al (2005) in Ghana found that high cost of skilled delivery pack is one major barrier to the use of skilled delivery services among pregnant women. This was corroborated by the findings of this study which established that the effect of high cost of delivery pack was similar in both Tamale Metropolis and Nanumba North as 53.5% of the women in Tamale Metropolis did not deliver in health facility because of high cost of delivery pack compared to the 46.5% of the Nanumba North women.

The coverage of health facility utilization for childbirth was 45.1 % (325) in the whole sample. Coverage of health facility deliveries was higher in Tamale Metropolis than Nanumba North (48.6 % versus 41.7 %) which supports the findings of MICS (2011) and GDHS (2008) which established that urban women were more likely to deliver in health facilities than rural women.

5.4 Quality of skilled delivery services in the Tamale Metropolis and the Nanumba North District

The quality of healthcare service is reported to have an influence on the patronage. According to Madson (2000) the main parameter for assessing quality of services is clients' satisfaction with the service. This parameter was used in assessing the quality of skilled delivery services offered in the health facilities. The study found that service quality was poor in Nanumba North as it was reported by 65% of the respondents who delivered in health facilities. Compared to Nanumba North, women who delivered in health facilities in Tamale Metropolis received excellent services. This is in consonance with the findings of Yayla, (2003) who found that health facilities

in urban areas provide quality services than those in rural areas. This was attributed to the availability of sophisticated equipment and health personnel in these health facilities.

Stanton et al (2007) found that 70% of women who delivered in health facilities in urban areas were satisfied with the services as compared to the 34% of those in rural areas in Kenya. This is consistent with the findings of this study which found that satisfaction with the skilled delivery services was high (77.8%) among Tamale Metropolis women than those in Nanumba North (22.2%).

5.5 Perceived Factors that Influence Non-Delivery in Health Facility

An assessment of the factors that will make a woman not to deliver in a health facility was made by this study. The institutional level factors perceived as barriers to delivering at health facilities included negative staff attitude and lack of privacy in the labor wards, not being allowed to deliver in the preferred position. The most frequently cited reason for not delivering in health institution in the Nanumba North was fear of caesarean delivery which is consistent with the findings of PPAG (2012) that 32% of women who delivered at home in the Northern region cited the preferred position of delivery as one reason for home delivery. In the Tamale Metropolis slow response of nurses and lack of privacy were given for non-patronage of skilled delivery services. This is consistent with the assertion by Ronsmans and Graham (2006) who reported from their study on maternal mortalities in developing countries that slow response of nurses leads to increased maternal mortalities. The uptake of skilled delivery services by Nanumba North and Tamale Metropolis women was found to be influenced by the high cost of delivery pack (50.8% versus 49.2%). This shows that both Nanumba North women and Tamale Metropolis women have a difficulty in acquiring delivery pack. This reaffirms the finding of

Starrs (2009) that high cost of charges in health facilities prevents pregnant women from delivering in health facilities.

5.6: Determinants of Place of Delivery

The factors that were found to influence the use of skilled delivery services were mainly demographic factors which were already established by some studies conducted elsewhere. Frequency of ANC attendance was found to be a predictor of facility delivery. This supports the findings of WHO (2011) which reported that women who make 4 plus ANC visits are more likely to deliver in health facilities than those who do not make the required number of visits. This could be attributed to the education received during ANC and the improved health seeking behavior of such women. According to Stephenson et al (2007) distance to health facility has an effect on the use of healthcare services. This is because of the transportation difficulties and the additional cost of transportation fare added to the healthcare cost. This was corroborated by the finding of this study that distance to the nearest health facility had an influence on facility delivery. Women who were found to be closer to health facilities delivered in health facilities as compared to those who stayed far away from the health facilities. Other factors that were found to have an influence on facility delivery were maternal age and parity which is consistent with the finding of Babar et al (2004) that older women were more likely to deliver at home than younger women. This is due to the previous experience of delivery among older women. The GDHS (2008) asserted that women of higher socio-economic status were more likely to deliver in health facilities than those with lower socio-economic status. This study equally found that women with high household wealth index delivered in health facilities than those with lower household wealth index. This is due to their ability to afford transportation cost and the cost of delivery pack. The survey also found that women with higher educational level used skilled

delivery services than those with lower educational level. This is due to their high knowledge of the dangers of obstetric complications and also their higher socio economic status compared to those with lower or no level of formal education. Higher educated women are also more likely to have higher autonomy and takes part in decision making than those without any formal education.

Several factors account for disparities in the use of skilled delivery services among Nanumba North and Tamale Metropolis women. The determinants of health facility deliveries were not exactly the same in the Tamale Metropolis and Nanumba North. The results of this study showed that in the Nanumba North, socio-economic status as measured by household wealth index was not an important predictor of utilization of health institutions for birth. This is inconsistent with the findings of the GDHS (2008) that women with higher socio-economic status were more likely to deliver in health facilities in Ghana. However, no distinction was made about their place of residence that is whether urban or rural. The frequency of ANC attendance, parity, distance from health facility, and women autonomy were strong determinants of skilled supervised delivery in the rural areas. These are consistent with the findings of Stephenson eta l (2007), PPAG (2012) and Kabeer (2003).

In the Nanumba North, women who attended ANC at least four times were 15.6 times more likely to deliver in a health institution, compared to women who attended for less than 4 times which supports the assertion of the WHO (2010) that women who make the minimum 4 plus ANC visits are more likely to deliver in health facilities than those who do not make the minimum required number of ANC visits. Women who were far from health facility (> 4 km) had 85 % protection against patronizing institutional delivery services which corroborates the finding of Stephenson et al (2007).

Women of high parity (> 4) were 11 times more likely of delivering in a health facility, compared to women of lower parity. This finding is inconsistent with that of AbouZahr (2003) who found that among rural women, as the number of deliveries of a woman increased the likelihood of her delivering in a health facility decreased. This was attributed to the experiences they gather in delivery. This was more likely to occur among women who had no difficulties in their previous deliveries. The point of inconsistency or disagreement in the findings of the two studies could be due to the fact that this study was a comparative study which involved two groups of women from different study settings. Parity was found to be a significant determinant of the use of skilled delivery services among Nanumba North women but not in Tamale Metropolis women because of the high fertility rate in the Nanumba North compared to the Tamale Metropolis. In Nanumba North there is a geographical barrier in accessing health facilities so only difficult labour cases are sent to health facilities whilst women with experience in labour strive to deliver at home.

5.7 Barriers to the Uptake of Skilled Delivery Services

The findings from the focus group discussions on the barriers to the uptake of facility delivery are consistent with the findings or results of the quantitative data. The main barriers to the uptake of skilled delivery services were lack of health facilities in the communities, high cost of delivery pack, poor attitude of nurses towards clients, ease or no difficulties in previous delivery and fear of caesarean delivery. These findings corroborate or synchronize with the findings from the quantitative data.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

Several studies have been conducted to assess the use of skilled delivery services among pregnant women in some districts of the Northern Ghana. However, none of the studies compared the use of skilled delivery services among Nanumba North District and Tamale Metropolis women in Northern Ghana.

This study was therefore conducted to compare the use of skilled delivery services among Nanumba North and Tamale Metropolis women. The study sought to investigate the following specific objectives:

i. Compare the rates of uptake of skilled delivery services among Nanumba North District and Tamale Metropolis women.

ii. Assess the quality of skilled delivery services in Nanumba North District and Tamale Metropolis.

iii. Find the determinants of the uptake of skilled delivery services in Nanumba North District and Tamale Metropolis.

iv. Identify the barriers to the uptake of skilled delivery services among Nanumba North District and Tamale Metropolis women.

6.1 Summary of Findings

The main findings of the study were:

- The proportion of women who made 4 plus ANC visits in the Tamale Metropolis was 48.6% compared to 37.5% of the Nanumba North women (Chi = 9.1, p =0.003). More Tamale Metropolis women delivered in health facilities than Nanumba North women (48.6% versus 41.7%) (Chi = 3.5 p = 0.06).
- Transportation difficulties were the most significant determinant of home delivery among women in Nanumba North thus 94.7% (125) as compared to 5.3% (7) in the Tamale Metropolis.
- The effect of high cost of delivery pack was similar in both Tamale Metropolis and Nanumba North as 53.5% of the women in Tamale Metropolis did not deliver in health facility because of high cost of delivery pack compared to the 46.5% (76) of the Nanumba North women.
- Service quality was found to be poor in Nanumba North as it was reported by 65% (26) of the respondents who delivered in health facilities.
- The coverage of health facility utilization for childbirth was 45.1 % (325) in the whole sample. Coverage of health facility deliveries was higher in Tamale Metropolis than Nanumba North (48.6 % versus 41.7 %) although the difference was not statistically significant (Chi-squared = 3.5, p = 0.06).
- In the Nanumba North, women who attended ANC at least four times were 15.6 times more likely to deliver in a health institution, compared to women who attended for less than 4 times (AOR= 15.63, 95 % CI [8.16, 29.95]). Women who were far from health facility (> 4 km) had 85 % protection against patronizing institutional delivery services (AOR= 0.15, 95 % CI [0.07, 0.29]).

- Women of high parity (> 4) were 11 times more likely of delivering in a health facility, compared to women of lower parity (1-2) (AOR= 11.21, 95 % CI [4.56, 27.58]). Women of high autonomy (economic independence, decision making, freedom of movement) were 3.4 times more likely of delivering in a health facility, compared with women of low autonomy (AOR= 3.44, 95 % CI [1.85, 6.39]).

6.2 Conclusion

Factors that influence the use of skilled delivery services differed among Nanumba North and Tamale Metropolis women. Educational level of women, economic status and parity were found to have a significant influence on the use of skilled delivery services among Nanumba North women. However, they did not show any positive association with the use of skilled delivery services among Tamale Metropolis women.

ANC attendance is intrinsically linked with the use of facility delivery. Women in the Tamale Metropolis attend ANC more frequently than Nanumba North women, hence more Tamale Metropolis women delivered in health facilities than Nanumba North women. However, the prevalence of institutional deliveries was not significantly different in the Nanumba North and Tamale Metropolis.

Skilled delivery service is poor in Nanumba North as compared to Tamale Metropolis. Transportation problems and distance to the nearest health facility are major setbacks to facility delivery in the Nanumba North.

6.3 Recommendations

Based on the findings of this study, the following recommendations are made:

i. The Regional and District Health Directorates intervention programs towards the use of skilled delivery services should involve or include the capacity building of the women themselves. They should be empowered economically to help in decision making and build self-confidence in them.

ii. The Ministry of Health, District Assemblies and NGOs should provide more health facilities in rural areas because majority of the rural women delivered at home because they did not have geographical access to health facilities.

iii. Nursing Officers in-charge should encourage nurses and midwives in health facilities to respond promptly to women in labor because delays from the nurses compelled some women to deliver at home.

iv. ANC attendance is intrinsically linked with the use of facility delivery. The Ghana Health Service should educate pregnant women on the benefits of facility delivery.

v. The Ghana Ambulance service should decentralize their services by deploying ambulance to communities that have no health facilities so as to ease the transportation difficulties.

6.4 Suggestions for Further Research

This study found that, slow response of nurses towards women in labour made Tamale Metropolis women deliver at home instead of health facilities. The reasons for the slow response were not established by this study. It is therefore recommended that further research should be conducted to compare the attitude of health professionals towards patients in Nanumba North District and Tamale Metropolis.

6.5 Limitation of the Study

The main limitation of this study was the fact that it was cross-sectional and therefore no causal inferences could be made.

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APPENDICES

Appendix A: Study Questionnaire for Three months Postpartum Women
QUESTIONNAIRE

FACTORS INFLUENCING UPTAKE OF SKILLED DELIVERY SERVICES IN TAMALE METROPOLIS AND THE NANUMBA NORTH DISTRICT

INFORMED CONSENT

Hello, my name is **Jones Akuamoah Boateng** and I am a student of the University for Development Studies offering a masters degree programme in community Health and Development. I am conducting a study on "**Factors Influencing the Uptake of Skilled Delivery Services** ". I would very much appreciate your participation in this study .This information will help the District Health directorate ,private agencies, the community and other decision making bodies to plan and improve the uptake of skilled delivery services.

The interview would last between 30 to 45 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to any other than the District Health Directorate and the University.

Participation in this survey is voluntary ,and if we should come to any question you don't want to answer ,just let me know and I will go to the next question ; or you can stop the interview at any time .However I hope that you will participate in this study since your views are important .

At this time do you want to ask me anything of this study? May I begin the interview now?

Signature of interviewer ---------- Date----------

Respondent agrees (A) Yes (B) No Record the time ----------

IDENTIFICATION

Name of district……

Sub-District……...

Cluster Name.....

Interview Date……

Interview #.....

House Number/Name ……

Name of Interviewer……

INSTRUCTION: Administer this questionnaire to post-partum women (≤ 3 months)

Please **tick** the appropriate box below

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Age of respondent……
2. Marital status

   1. Single 2. Married 3. Divorced 4. Widowed
3. Educational level of respondent

   1. No schooling 2.Primary 3.J.S.S/Middle 4. S.S.S /O Level 5. Post sec/ Tertiary

4.What is the educational level of your husband?

1. No schooling 2.Primary 3.J.S.S/Middle 4. S.S.S /O Level 5. Post sec/ Tertiary

4. Occupation

   1. Unemployed 2. Petty trader 3. Farmer 4. Civil/Public Servant 5. Others (specify) ……
5. Respondents Religion

   1. Muslim 2. Christian 3. Traditional 4. Others (specify) ……
6. Sex of baby

   1. Male 2. Female

SECTION B: MATERNAL ANC HISTORY

7. How many children have you given birth to? ……..
8. Did you attend antenatal care during your last pregnancy?
   1. Yes 2. No
9. If yes to the above question, number of visits before delivery (***Please confirm from Maternal Health Record Book***).
   1. Once 2. Twice 3. Thrice 4. Four Times 5. Four plus
10. How old was your last pregnancy when you made the first ANC visit?
    1. Zero to three Months 2. Four Months 2. Five and above

11. What were the ANC services received during your last pregnancy (Please probe and record all responses).
    1. Urine for lab investigation 2.Blood for lab investigation 3. Scan4. Palpation 5. Malaria prophylaxes (SP) 6. Health talk 7. Others (specify)……..
12. Were all your expectations of ANC services met?
    1. Yes 2. No
13. If no to the above question, what do you think should have been added?

    ……

    ……

SECTION C: <u>SKILLED DELIVERY SERVICES</u>

1. Which of the following places did you deliver your youngest child?

A. Home-self
B. Home-TBA
C. Home-SBA
D. Health facility-SBA

E. Other (specify)……..

2. If home or TBA's house, was delivery there planned? A. Yes B. No

3. If yes, what was the main reason for not delivering at a health facility?

A. No difficulty in previous deliveries
B. No health facility available
C. Long distance from health facility
D. Bad attitude of health workers
E. Cost of delivery (Bed preparedness)
F. Lack of Privacy during delivery
G. Presence of male staff members during delivery
H. Hospital staffs do not allow women to deliver in their preferred way (squatting)
I. Cultural/religious beliefs in conflict with hospital delivery
J. Fear of caesarean delivery
K. Transportation difficulties

4. If home delivery was not planned, what was your reason?

A. Spontaneous labour
B. Late night labour
C. Problems with previous home delivery
D. Others (specify)……

5. Who assisted or attended to you during your last delivery?

A. No attendant (self)
B. Doctor/Midwife
C. Mother-in-law /Relative
D. Health assistant
E. Traditional birth attendant
F. Others (state) ……

6. If your last delivery was in the health institution, why did you prefer to give birth there? (Multiple answers possible)

A. Friendly staff
B. Advice received from community opinion leader
C. Shorter waiting time
D. Quality of care
E. Facility is neat and clean
F. Respect for privacy
G. Adequate and complete medication
H. Health staff is available when needed
I. Cheaper services
J. Close proximity/easy to reach
K. Others (Specify) .....
L. Not Applicable (delivered at home)

7. Name the major factors that will make you not deliver at a health facility.

A. Cost of delivery not affordable
B. Transportation difficulties
C. Cultural/religious beliefs in conflict with hospital delivery
D. Fear of caesarean delivery
E. Hospital staff do not allow women to deliver in their preferred way (squatting)
F. Hospital staff slow in responding to patient needs
G. Fear of being abused by midwives
H. presence of male staff members during delivery
I. Lack of Privacy during delivery
J. Others (specify).....
.....

8. How will you rate the quality/adequacy of delivery services received during your last pregnancy?

A. Poor
B. Fair
C. Good
D. Excellent

E. Not applicable

9. What was your level of satisfaction with delivery services received?

A. Dissatisfied
B. Satisfied
C. Very satisfied
D. Indifferent
E. Can't say

10. When there is an emergency obstetric problem in this community, where do you/people have to go?

A. Taken to hospital
B. Taken to a health center
C. Taken to a TBA

11. What mode of transport is usually used for emergency cases in this community?

A. Bicycle/motorcycle ambulance
B. Ambulance
C. Wheelbarrow
D. Car /lorry
E. Other (specify)_____

12. How much do the facilities charge you when you deliver?

A. No fee paid
B. Less than 5 GH
C. 5GH – 10 GH
D. 11 GH – 19 GH
E. 20 GH and above

F. Not Applicable

13. Mention two danger signs during delivery:

A. Prolonged labour
B. Excessive bleeding
C. Placenta retention
D. Breech presentation
E. Others (specify).....
.....

14. What kind of preparations did you make before the birth of your child?

A. Saved money
B. Bought Clean Delivery Kit
C. Found Blood Donor
D. Arranged of Transport
E. Contacted Health Worker to Help With Delivery
F. Others (specify)

15.What are some of the cultural or traditional beliefs in this community regarding women giving birth at the health facilities? (Please state)
.....

SECTION D: PHYSICAL ACCESSIBILITY TO HEALTH SERVICES

1. Distance to health facility where respondent receives health care? (Please estimate in Km) ☐☐

2. What is the usual means of transport to the health facility?

1. Lorry/truck/car 2. Animal drawn cart 3. Motor bicycle 4. Bicycle 5. Walking

3. What is the condition of the road leading to the health facility?

1. Very poor 2. Poor 3. Good 4. Very good 5. Excellent

SECTION E: SOCIOECONOMIC HOUSEHOLD WEALTH INDEX OF RESPONDENT

INSTRUCTION: These questions should be asked in the house of the respondent

33. What type of house do members of the household dwell in?

1. Block house
2. Brick house
3. Mud house
4. Others (specify).....

34. Does the household own a house?

1. Yes
2. No

35. How many rooms does the household have at their disposal? .....

36. What kind of toilet facility do members of the household usually use?

1. Own flush toilet
2. Public or shared flush toilet
3. own pit toilet
4. public or shared pit toilet
5. No facility

37. What is the source of lighting for the household?

1. Electricity
2. Gas
3. Kerosene
4. Others (specify) .....

38. What type of fuel does your household mainly use for cooking?

1. Electricity
2. LPG
3. Charcoal
4. Kerosene
5. Firewood
6. Others (Specify)……..

39. What is the main source of drinking water for members of the household?

A. Pipe water
B. Borehole
C. dug well
D. Bottle /Sachet water
E. Others (specify)……

40. Does your household have any of these assets? (Tick Yes or No)

ITEMS	YES	NO
Radio		
Clock or watch		
Colour TV		
Black and white TV		
Sewing Machine		
Mattress		
Cot or Bed		
Table		
Chair		
Refrigerator		
Computer		
DVD/VCD player		
Electric Fan		
Telephone/mobile		

Bicycle		
Motorcycle		
Animal-drawn cart		
Car/truck		
Ownership of livestock		

SECTION F: WOMEN AUTONOMY STATUS/EMPOWERMENT QUESTIONS

44. What is your family's main source of income?
    1. Husband's earnings
    2. Own earnings
    3. Yours and husbands earnings
    4. Others
    5. (specify)_____

45. Do you earn monthly income by your own? 1. Yes 2. No

46. How often do you have money that you alone can decide how to spend?
    1. Always
    2. Often
    3. Sometimes
    4. Never

47. Do you currently have any type of savings Scheme?
    1. Yes, partners savings
    2. Yes, mine and partners savings
    3. Yes, self savings
    4. No, we don't have any savings

48. Do you take part in decision making on household matters? (1) No (2) Yes

If yes

49. Which household matters do you decide together with your partner? (1) Own Health care, (2) large household purchases, (3) daily purchase, (4) children's education, (5) household expenditure

50. Do you have the right to decide how to spend your own money? (1) Yes (2) No

51. Who makes the decision if you need to buy clothes for you and the family?
    1. Your Husband/partner
    2. You and husband
    3. Myself alone

52. Who makes the decision if you need to buy large household items/furniture?
    1. Your Husband/partner
    2. You and husband
    3. Myself alone

53. Who makes the decision whether a child is sick enough to go for treatment?
    1. Your Husband/partner
    2. You and husband
    3. Myself alone

54. Who makes the decision whether you should work outside of the home?
    1. Your Husband/partner
    2. You and husband
    3. Myself alone

55. Who makes the decision when your children have stationeries /school needs to be addressed?
    1. Your Husband/partner
    2. You and husband
    3. Myself alone

56. Who makes the decision on how to spend the family's income?
    1. Your Husband/partner
    2. You and husband
    3. Myself alone

57. Who decides how the money you earn is spent?

    A. Your Husband/partner
    B. You and husband
    C. Myself alone

58. Who in your household usually has the final say on the following decisions (Tick only one)

Decision	Respondent alone or with somebody else	Somebody else (Respondent not involved)
Your own health care?		
Making large household purchases?		
Making household purchases for daily needs?		

Visits to family or relatives?		
What food should be cooked each day?		
You should do work to earn money?		
What to do if a child falls sick?		
Having another child?		

B. Freedom of movement: Indicate yes or No in the following situations

59. If you are ill and need to see a doctor, do you first have to ask someone's permission?

A. Yes B. No

60. Are you usually allowed to go to the following places on your own?

Decision	Yes	No	
Just outside your house or compound?			
Local market to buy things?			
Local health center or doctor?			

In the neighborhood for recreation?			
Home of relatives or friends in the neighborhood?			

Appendix B: Focus Group Discussion Guide

UNIVERSITY FOR DEVELOPMENT STUDIES

A comparative study of the uptake of skilled delivery services among Nanumba North District and Tamale Metropolis women

FOCUS GROUP DISCUSSION GUIDE

CONSENT FORM

Thank you for agreeing to participate. I am very interested to hear your valuable opinion regarding the factors that influence the uptake of skilled delivery services.

- *The purpose of this study is to find out the factors that influence the uptake of skilled delivery services in the Nanumba North District and Tamale Metropolis.*
- *The information you give us is completely confidential, and I will not associate your name with anything you say in the focus group.*
- *I would like to tape/record the focus groups so that I can make sure to capture the thoughts, opinions, and ideas we hear from the group. No names will be attached to the focus groups and the tapes will be destroyed as soon as they are transcribed.*
- *You may refuse to answer any question or withdraw from the study at anytime.*
- *I understand how important it is that this information is kept private and confidential. I urge all participants to respect each other's confidentiality.*
- *If you have any questions now or after you have completed the questionnaire, you can always contact me or the district director of health service our names and phone numbers are on this form.*
- *It is a learning process as we are going to learn from each other/*
- *We would like the discussion to be informal, so there's no need to wait for us to call on you to respond. In fact, we encourage you to respond directly to the comments other people make. If you don't understand a question, please let us know. We are here to ask questions, listen, and make sure everyone has a chance to share.*

- *Please check the boxes on page 2 and sign to show you agree to participate in this focus group.*

Name of group interviewed ……

Date ……

Time discussion started ……

Site ……

Time ended ……

Number of participants ……

Name of facilitator……

NO.	*Name*	*Age*	*Marital Status*	*Sign.*
1				
2				
3				
4				

5				
6				
7				
8				
9				
10				

QUESTIONS

1. Where did you deliver your index child?

2. Did you seek prenatal care during your pregnancy? How many ANC visits did you make before delivery and why?

3. Does place of delivery has any relevance in the survival of the child and her mother? Why?

4. Are there differences in the use of skilled delivery services among Nanumba North District and Tamale Metropolis women? Why?

5. What account for the differences in the use of skilled delivery services among Nanumber North District and Tamale Metropolis women?

6. What are the barriers to the use of skilled delivery services among Nanumba North District and Tamale Metropolis women?