UNIVERSITY OF CAPE COAST

FACTORS THAT INFLUENCE WOMEN'S PLACE OF DELIVERY IN THE WA WEST DISTRICT

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BY

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THESIS SUBMITTED TO THE DEPARTMENT OF POPULATION AND HEALTH OF THE FACULTY OF SOCIAL SCIENCES, UNIVERSITY OF CAPE COAST, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR AWARD OF MASTER OF PHILOSOPHY DEGREE IN POPULATION AND HEALTH

JULY, 2014

DECLARATION

Candidate's 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 the university or elsewhere.

Candidate's Name: Vitus Bobrnuo

Signature: …….. Date: …….

Supervisor's Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Name Dr. David Teye Doku

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Co-supervisor's Name: Dr. Matthew Nkrumah

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ABSTRACT

Utilisation of health service during delivery is an important predictor of maternal and child health. This study identifies factors that influence women's place of last delivery in the Wa West District of the Upper West Region of Ghana. A cross sectional study design was used. A quantitative study, involved 384 women age 15 – 49 years and who had given birth three years prior to the study. Descriptive analyses which involved frequency tables and charts were used while binary logistic regression analysis was used to explore the relationship between the dependent variable and predictors variables. Results are presented as odds ratios (OR) at 95% confidence interval. While content analysis was used to analyse the qualitative data.

Fifty–nine percent of women had their last delivery at a health facility. Multivariate analyses revealed that women who had 3 and 4 children parity, women with secondary education or higher, women traders and women who took between 1-2 km and 5 km or more from residence to reach health facility were more likely to deliver at health facility. The last place of delivery of the women had significant relationship with age, education and proximity to nearest health facility. The finding has important implication the achievement of the Millennium Development Goal five which is aimed at reducing maternal mortality by three quarters between 1990 and 2015. The findings suggest that interventions aimed at reducing maternal and infant mortality should be tailored to address the needs of women with low educational status those with higher parity, those belonging to the traditional religious faith and those with no religion.

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DEDICATION

To my parents, Mr. and Mrs. Bobruno, my wife Mrs. Gertrude Bobruno; my daughters Angela and Annie, my siblings, Alice, Lydia and Alex for their love and concern for my education.

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LIST OF ACRONYMS

ANC	Antenatal Care
CHAG	Christian Health Association of Ghana
CHPS	Community based Health Planning Services
DHMT	District Health Management Team
EDHS	Ethiopia Demographic and Health Survey
CDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GSS	Ghana Statistical Service
IMCC	International Medical Cooperation Committee
MDG	Millennium Development Goal
RCH	Reproduction and Child Health
SPSS	Statistical Product and Service Solution
TBA	Traditional Birth Attendant
UN	United Nation
UNFPA	United Nation Population Fund Agency
UNICEF	United Nation International Children Emergency Fund
VRA	Volta River Authority
W.H.O.	World Health Organisation
WWDESO	Wa West District Education Service Office
PHC	Population and Housing Census
OR	Odds Ratio

CI	Confidence Interval
MICS	Multiple Indicators Cluster Survey

CHAPTER ONE

INTRODUCTION

Background to the study

After twenty years of the launch of the International Safe Motherhood Initiative [ISMI], maternal mortality is still a major global public health concern. An estimated 536,000 women die worldwide each year from pregnancy-related causes of which more than 95 percent occurs in sub-Saharan Africa and Asia (World Health Organization [WHO], 2007). Assessment of maternal mortality trend for 181 countries in the period between1980–2008 approximated that 342,900 maternal deaths occurred globally in 2008, a decline from 526, 300 in 1980. Over 50 percent of these maternal deaths occurred in India, Pakistan, Ethiopia, Nigeria, Afghanistan and Democratic Republic of Congo (Alemayehu, Fekadu & Solomon, 2012).

The risk of maternal deaths in sub-Saharan Africa is as high as 1 in 22 mothers, only second to Asia which has the highest risk of 1 in 20, compared to North Africa which has 1 in 201 mothers, Oceania 1 in 62mothers, 1 in 290 for Latin America and the Caribbean (Yalem, 2010). In sub-Saharan Africa, Nigeria leads in maternal deaths with a maternal mortality of 1,100, which is higher than the regional average. The country also has an estimated maternal mortality of 59,000 year which contributes to almost 10 percent global maternal deaths (Babalola & Fatusi, 2009).

Millennium Development Goal (MDG) five is targeted towards reducing maternal deaths by three-quarters (3/4) between 1990 and 2015 (United Nations

[UN], 2007). However many developing countries are not performing so well to achieve these MDG's goals.

In low and middle income countries many women still deliver at home without the assistance of trained personnel (Mrisho, Schellenberg, Mushi, Obrist, Mshinda, Tammer, & Schellenberg, 2007). This has generated serious concerns since women develop life threatening complications during pregnancy and childbirth and therefore require appropriate and accessible care (Sabine & Oona, 2009).

Reasons for home delivery according to a study in West Java province was an issue of perceived need. This refers to the way people view their general and functional state of health, their experience of symptoms of illness, pain and worries about their health and whether they sees it as a problem. There is the perception that delivery is a natural rite of passage for women and therefore home delivery is preferred unless complications occur before the need will arise for health facility delivery. Additionally access to service in terms of physical distance is an issue for most mothers living far away from health facilities and therefore home delivery is preferred. Reasons that will account for the need for health facility delivery is complications at childbirth, competency of skilled personnel and better equipment and when advised by a skilled personnel to deliver at health facility (Titaley, Hunter, Dibley & Heywood, 2010).

In terms of the low percentage of deliveries that are supervised by trained health personnel, the African sub-region is again confronted with a poor performance of

skilled supervised delivery. Only 50 percent of women worldwide are estimated to have access to skilled care during delivery (Iddri, Gwarzo & Shehu, 2006). In Africa, it is revealed that less than 50 percent of births are supervised by skilled health personnel. The period between 1990 and 2005, however, witnessed an increase in supervised deliveries from 43 percent to 57 percent in most developing nations including some countries of Africa (Manjira et al., 2011). Even though that increase might be considered as an improvement in the situation, it has failed to eradicate the high risks of maternal deaths that women of child bearing age are exposed to.

The use of trained and experienced skilled birth attendants in health care facilities could make it possible for easy diagnosis and handling of complications and possibly make referrals when the need arises. This is an effective intervention strategy which is to reduce maternal mortality (Akoblinsky et al., 2006). In other words, a delivery supervised by skilled professional attendants has the tendency of reducing maternal mortality. In view of this, access to the services of skilled health professionals during pregnancy and at childbirth has become part of the overall strategy in many countries to reduce maternal mortality. As noted by Sabine and Oona (2009), there is a strong advocacy for the use of skilled birth attendants at delivery since it is an important factor for curbing maternal health problems.

Once a woman is pregnant, there is the need for essential medical care and monitoring to ensure her safety and that of her baby. Early and routine check-ups by health personnel are necessary in determining the health status of pregnant

women. This is to ensure that appropriate measures and interventions are taken during delivery (Nketiah, 2009). On the contrary, a lot of births are conducted at homes in many parts of the developing world with assistance from traditional birth attendants. Most industrial countries, on the other hand have overcome this as a result of development in professional midwives (DeBrowere & Lerberghe, 2001).

Each year, an estimated 50 million women give birth at home without skilled care and almost 99 percent of all maternal deaths which are experienced are due either to non-availability or non-use of skilled attendants(WHO, 2000). Most of these maternal deaths could be avoided if all deliveries of babies were conducted in health facilities by skilled birth attendants such as midwives who are capable of providing emergency obstetric care for both mothers and babies in the event of complications (Sabine, Cousens, Jonathan & Cambell, 2011).

Almost all obstetric complications occur at the time of delivery and are mostly unpredictable. For this reason, it is important that all pregnant mothers have access to a health facility and skilled attendants, that is, a person with midwifery skills who has the ability and skills to manage normal delivery and detect and manage obstetric complications or make referral when the need arises (Sabine & Oona, 2009).

In developing countries, such as Malaysia and Sri Lanka they have been able to reduce maternal mortality through high-level improvement in their health system infrastructure to cater for obstetric complications and political

commitment to mothers' survival by professionalizing delivery care (Fernando, Tilleka & Karunaratna, 2003).

According to Alemayehu, Fekadu and Solomon (2012), the major global causes of maternal mortality are haemorrhage (24%), unsafe abortion (13%), infection (15%), prolonged labour (12%), and eclampsia (12%). But, in Africa, primary causes of maternal deaths are associated with haemorrhage (34%), infection (10%), other direct causes (17%), obstructed labour (4%), hypertensive disorders (9%), anaemia (4%) and abortion (4%).

In Ghana, it is estimated that about 1400 to 3900 females die annually as a result of pregnancy related complications. To a large extent, a greater proportion of these deaths could have been avoided if there had been timely visits to health facilities. Also pregnancy and childbirth complications stand as the leading cause of disability and mortality among females in their reproductive age in Ghana (Nketiah, 2009).

Maternal mortality rate in Ghana is 230 per 1,000,000 live births (Ghana Health Services [GHS], 2007). One way to assess the effectiveness of safe motherhood services is to look at the ratio of deaths of women from pregnancy to puerperium (GHS/Reproductive and Child Health [RCH], 2008).

There are several reasons for which women choose to give birth at home or not to use obstetric service. Among these reasons are lack of awareness of maternity awaiting homes, financial constraints and no perceived need for such services (Iddri, Gwarzo & Shehu, 2006).

In the developed world, on one hand, the choice and preference of women to have births in a health facility is based on their understanding of birth as a social process which is based on biomedical knowledge and this mediates women's choices and preferences as to where to have a child born (Viisianen, 2001). In developing countries, on the other hand, the perception varies, ranging from indifference in the use of biomedical services even at the stage of pregnancy related complications to the desire to have home births with family members around (Berry, 2006).

There are socio-economic, cultural and religious factors which influence women choice and preference for a particular delivery place. Among some communities in Ghana, it is considered as a bad omen if a woman should deliver through caesarian section and therefore delivery at home is preferred. Again, a woman who happens to experience a prolonged labour coupled with difficulties in delivering, is believed to have cheated on the husband and must therefore confess in order to have a safe delivery (Nketiah, 2009).

According to the 2008 Ghana Demographic and Health Survey [GDHS], 57 percent of births were conducted in health facilities with public health facilities recording the largest proportion. This was an increase compared to the 2003; 46 percent. Several factors account for this and include women with low parity are more likely to deliver at a health facility as compared to woman with high parity, and women in urban settings were more likely to deliver in health facilities as compared to those in rural settings. It was revealed that delivery at a health facility is strongly related to mother's level of education and wealth status. Thirty-

five percent of mothers with no education were delivered at a health facility while 91 percent of mothers with at least secondary education are more likely to deliver in health facility. By wealth status, births in health facilities were 24 percent for low wealth quintile and 93 percent for high wealth quintile. (GSS, GHS & ICF Macro, 2009).

To minimise health risks among mothers and their babies, one way is to encourage delivery under the supervision of medical professionals. The support received by a mother during labour has a great consequence on both the mother and the baby's health and survival. Deliveries that occur at homes have greater chances of not being supervised or assisted by a skilled professional as compared to deliveries at a health facility where labour is handled by trained medical professionals (GSS, GHS & ICF Macro, 2008).

According to the 2008 GDHS, deliveries assisted by health professionals' were 59 percent whereas delivery supported by traditional birth attendants was 30 percent, one in ten births were assisted by a relative or received no assistance at all. In the case of the Upper West Region, community health officer's assistance to delivery care was eight times greater than that provided by doctors (8 percent and 1 percent respectively). This situation may be partly attributed to lack of medical doctors in the region and partly due to the socio-economic, cultural and religious factors that affect women's attitude toward seeking professional assistance during child delivery. Women's perception of the health facility as a harsh setting for childbirth will make them choose to deliver at home (Cotter, Hawken & Temmerman, 2006). For some women if there is no dangerous

complications during pregnancy then home delivery is safe (Mwifadhi, Brigit, Joanna, Rachel, Haws, Hassan, Marcel & David, 2009). The level of preparedness is an important factor in influencing mother's choice of place of delivery (Mulongo, Witte, Bajunire, Nabukera, Muchunguzi, Batwala, Farr, & Barry, 2006).

Despite the fact that maternal health care is important for the improvement of child and maternal health, much is not known about the magnitude of use and factors influencing the choice of place of delivery among women within the Wa-West district.

Statement of the problem

Most maternal deaths are preventable if deliveries were managed by health professionals (Iddris & Shehu, 2006). Since labour complications cannot be predicted, deliveries need to be at a health facility because these places have skilled professionals and facilities to manage complications when present. Ghana lost 837 women at a ratio of 204 per 100,000 live births in 2002, 824 in 2004, 912 in 2005 and 954 in 2006 due to pregnancy complications (Yamikeh, 2008).

Although efforts are made globally to ensure safe motherhood, obstetric deliveries with skilled attendants is still low in Ghana (WHO, 2004). The government of Ghana has since 2007 made delivery in government health facilities free for all women. In spite of this, the Wa-West district still records low institutional and skilled delivery as compared to delivery in homes and by Traditional Birth Attendants [TBA]. For instance, skilled delivery in 2010 was 10.2 percent compared to16 percent by TBAs while in 2011, TBA delivery was

1053 compared to institutional delivery of 861(GHS, 2007). Given the current situation of the district in the light of the ongoing efforts in reducing the disparities in terms of access to health facilities between regions and districts by the establishment of community based health planning services this should be a cause of concern. The establishment of community based health services are meant to ensure health care services are available at the communities and rural areas. The majority of women in the study area still choose to have childbirth at home and with TBAs. As it stands, no study has been conducted to assess factors that influence choice of place of women's delivery in the study area. It is against this background that the present study is being conducted.

A look at the number of health facilities across the entire district reveals that there are five healths enters, one private maternity home, one Christian Health Association of Ghana [CHAG] facility and fourteen community based health planning services [CHPS] within a total of six sub-districts. Staff comprises a physician, nine professional general nurses, one public health nurse, forty-five community health nurses, six midwives, seven ward assistants, six enrolled nurses and seventy-three health extension workers. Total birth deliveries for the six sub-districts for the year 2011 were 1914. Out of this, 1053 deliveries were by TBA's and 861 by institutional health workers (Wa-West DHMT, 2012). The difference between TBA's and institutional delivery despite the presence of numerous health facilities and health staff calls for the need to identify factors that influence women last place of delivery in the Wa-West District of the Upper West Region of Ghana.

Aims of the study

The main aim of the study is to identify factors that influence women's last place of delivery in the Wa-West District. Specifically the study seeks to focus on the following:

1. To identify the relationship between last place of delivery and women's socio-demographic variables (age, religion, ethnicity, marital status, parity).
2. To identify the relationship between last place of delivery and women socio-economic variables (education, occupation, partner education, partner occupation).
3. To assess the relationship between women's autonomy at the household level and last place of delivery.
4. To investigate the relationship between proximity to the nearest health facility and the last place of delivery.

Hypotheses

1. H_o: There is no significant relationship between last place of delivery and women's age.

   H_1: There is significant relationship between last place of delivery and women's age.

2. H_o: There is no significant relationship between last place of delivery and women's education.

   H_1: There is significant relationship between last place of delivery and women's education.

3. H_o: There is no significant relationship between last place of delivery and women's autonomy at the household level.

   H_1: There is significant relationship between last place of delivery and women's autonomy at the household level.

4. H_o: There is no significant relationship between last place of delivery and proximity to nearest health facility.

   H_1: There is significant relationship between last place of delivery and proximity to nearest health facility.

Significance of the study

Maternal mortality ratio in Ghana raised from 187 per 100,000 live in 2006 to 203 live births in 2007 (GHS, 2007). The target of the safe motherhood programme is to improve women health in general and reduce maternal mortality and morbidity while contributing to the reduction of infant mortality and morbidity. The study aims to identify factors that influence women's last place of delivery in the Wa-West District in Upper West Region. The study could contribute to maternal health improvement and help inform stakeholders and management of health planning services, of possible interventions to improve utilisation of health facilities. The study could inform the District Health Management Team about perceptual issues which affect women in the use of health facility delivery in the district so that strategies could be developed to make health facility delivery more receptive and acceptable to women in the district. The study results will be relevant and useful to reproductive health planners as it will enable them to come out with appropriate and effective interventions. The study will contribute to existing knowledge and serve as in put to existing policies and strategies. It could be first-hand information to planning for appropriate interventions for safe motherhood services in the Wa- West District. The findings could inform the level at which MDG five, which is meant to improve maternal health, is progressing in the district. Maternal deaths shows a slow progress among all the MDG targets, with two years to 2015 there is the need to further reduce maternal mortality rate in order to get to the MDG target of 50 per 100,000 lives in 2015 this shows the country is unlikely to achieve this MDG target of

maternal mortality ratio. Therefore public action and interventions policies should expedited to address the challenges for an improvement in the current levels (http//:www.gh.undp.org, 2 May 2014, 2:00 pm)

Organisation of the thesis

The entire study is organised into five chapters. Chapter One address issues on background to the study. The background highlights major issues relating to maternal mortality globally, in developed and developing countries, issues on skilled birth attendances, health facility and home delivery. The chapter also presents the statement of the problem of the study, the aims of the study, the hypotheses, and significance of the study and the organisation of the thesis.

Chapter Two of the study reviews the relevant literature. The chapter gives an in-depth review of literature that is related to the study topic. Chapter Three looks at the methodology of the study, which includes study design and methods, study area, target population of the study, sampling/sampling procedures, ethnical issues, source of data, instrument of the study, pre-test, measurement of variables, data analysis and problems encountered on the field.

Chapter Four presents the results and discusses the study findings based on previous studies and Chapter Five presents' summary, conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter provides important background knowledge with respect to earlier studies that are relevant to the study topic (Burns & Crove, 2007). Some of the areas cover in the literature are, primary health care in relation to maternal health, global overview of maternal mortality and morbidity, skilled attendants at childbirth, childbirth at home and health facilities, socio-demographic factors (age, marital status, ethnicity and religion), socio-economic factors (women education and occupation, partner education and occupation), women autonomy at the household level, physical distance to health facility and socio-cultural factors.

Primary health care in relation to maternal health

Alma Ata Declaration was adopted on 12th September, 1978 by the World Health Organisation. The concerned of the declaration was to ensure comprehensive, universal, equitable and affordable health care delivery for all. The strategy of the primary health care was to be used to achieve the goal of health for all by the year 2000. The primary healthcare strategy has a component that focuses on maternal and child health care and family planning. This component also encourages pregnant women to seek health professionals' advice during pregnancy and childbirth (Dennill, King & Swanepoel, 1999). The aim of achieving health for all by the year 2000 was, however, not accomplished due to a number of reasons. Among these reasons were the changes in economic

philosophy that brought about health sector reforms which were based upon the recommendations made by the World Bank in 1993. Another reason was that many of the countries did not show serious political commitment to achieving the goals of health for all (Hall & Taylor, 2003). A WHO Report also identified insufficient training of health workers, inadequate funding and inadequate equipment at all levels of health care delivery as some of the factors that contributed to the failure in achieving health for all by the year 2000 (WHO, 2000).

Global overview of maternal mortality and morbidity

The WHO estimated that in the year 2000, maternal deaths were about 529,000 globally, out of which about 251,000 occurred in Africa. With respect to maternal mortality rate, the global estimate was 400 per 100,000 live births. On regional bases, maternal mortality rate for Africa was 830 per 100,000 live births. Globally, pregnancies with complications were estimated as 15 percent. It was also estimated that one woman dies every minute as a result of pregnancy or child birth. In addition, 300,000 women die annually from pregnancy related (WHO, UNFPA, UNICEF & World Bank, 1999). Women in sub-Saharan Africa are at a higher risk of dying during pregnancy or during labour compared to only 1 in 4000 women in developed countries (UNICEF, 2003). The differences or disparity in the rate of maternal deaths is partly due to difference in access and use of maternal health care services. It is known that having a skilled attendant during every delivery can lead to reduction in maternal deaths. For this reason, the proportion of births attended by skilled health personnel is one of the indicators

for monitoring progress towards the achievement of the Millennium Development Goal five aimed of improving maternal health. (Mpembeni, 2007). Three-quarters of maternal deaths occur during delivery and the immediate post-partum period. The most critical intervention for safe motherhood is to ensure competent health workers with midwifery skills are present at every birth. Also transport should be available to a referral facility for obstetric care in the case of emergency (Ghana-Multiple Indicators Cluster Survey [MICS], 2011).

Skilled attendants at childbirth

A skilled attendant refers to a person who is exclusively trained with midwifery skills necessary to diagnose and manage normal deliveries and have the skills to detect complications and make referrals (WHO, UNFPA, UNICEF & World Bank, 1999). Midwifery skills can be a set of cognitive and practical skills that support a person to be able to provide basic health care from the period of prenatal continuum and also first aid for obstetric complications and emergencies in addition to life saving measures when the need arises (WHO, 2004).

Skilled attendance is the presence of skilled health personnel together with available equipment, drugs, supplies and a means of transport for conveyance of a woman in labour with complications (Graham, Bell & Bullought, 2001). There have always been wide disparities in maternal deaths between developing and developed nations. These disparities depend on how skilled cares have been organised and used (Lus, Della, Carla & Wim, 2003). Delivery by skilled attendant is an indicator for tracking the progress of the Millennium Development goal target of reducing maternal mortality ratio by three-quarters between 1990-

2015. About 68 percent births occurring in the two years preceding the 2012 Multiple Indicator Cluster Survey (MICS) conducted in Ghana were delivered by skilled personnel, (GSS, 2012).Thailand, with maternal mortality rate of 400 per 100,000 births in the 1960s was able to bring it down to 200 and 250 in 1990s, by the substitution of TBA's with certified village midwives (WHO, 20004). Egypt was also able to achieve higher use of skilled care during labour due to a two way strategy which was adopted and which involved quality care in health facilitates together with information aimed at decision-making at household level (Luc, Della, Carla & Wim, 2003).

Although the year 2007 marked the 20th anniversary of Safe Motherhood Movement, only half of the women of the world have access to skilled professional care during labour (GHS, 2007). For a satisfactory provision of skilled care, there is the need for over 700,000 midwives to provide global skilled care during labour (Thoraya 2007; Kanti & Koblinsky, 2007). Pregnant women can only plan their labour if they have regular antenatal care such as where to go safe delivery. According to Kanti and Kolinsky (2007) safe motherhood can only be resolved with the scaling up of skilled care professional at our health facilities.

Childbirth at home and health facilities

Mothers without skilled health assistance during labour yearly are estimated to be 34 percent globally. Developed nations have been estimated to have more than 99 percent of births being at health facilities and assisted by skilled birth attendants with 62 percent in developing countries. Some countries like Ethiopia are even worse off with a decline in health facilities delivery and skilled

attendants' assistance of less than 20 percent. A study conducted in Tigray, a district in Ethiopia, revealed institutional birth service utilisation to be very low. The study revealed 95.9 percent of home delivery as compared to 4.1 percent in health facilities (Yalem, 2010).

In Ghana naturally, births that occur at home are not catered for by skilled health professionals as compared to births that occur at health facilities. Women in Ghana who benefit from skilled professional assistance during childbirths are said to be less than 50 percent over the past fifteen years (International Medical Cooperation Committee [MCC] & SAVE, 2009).

In Nepal, a cross-sectional study conducted on 114,100 women revealed that 58.8 percent intended to have home delivery whilst 41.2 percent intended to have health facility delivery but finally ended up delivering at home (Heer, 2009). In Rakai, a district in Uganda, a study conducted on factors influencing choice of delivery place of women showed that 44 percent gave birth at home, 17 percent with traditional birth attendants, 32 percent with public health units and 7 percent at private clinics (Nuwaha & Amooti-Kagunga, 2002). Women's preference for birth attendant and birth place conducted in Syria indicated that 10 percent of them had no preference regarding the place of childbirth while 65.8 percent had preference for health facility delivery. Among those who prefer to deliver in health facilities, 60.4 percent wished to be attended to by medical doctors as compared to 21.2 percent by midwives (Hyam & Asmaa, 2006). Findings from a study among mothers who gave birth in the past twelve months in the district of Sekela, North West of Ethiopia, revealed that only 12.1 percent of mothers gave

birth at a health facility while a majority of them representing 87.9 percent were delivered at home. Out of those who were delivered at home, 80 percent were assisted by family members (Alemayehu, Fekadu & Solomon, 2012).

Factors that influence maternal health care utilisation

Socio- demographic factors

Maternal age

Both young and older mothers have varied experiences that could influence their health seeking behaviours. Younger women are more likely to utilise modern health care services than older women. According to Burgard (2004) and Gabryseh & Campbell (2009), younger women are more likely to be knowledgeable and even have greater exposure to modern health care. Again, they are in a better position to access education. However, older women have accumulated experience and knowledge on maternal health care and for that matter, have more confidence with regard to pregnancy and child labour issues. Older women are also likely to be uncomfortable with modern maternal health care services and hence feel reluctant to avail themselves of such services.

It is interesting to note that younger women were more likely to be delivered by skilled personnel than older women (GSS, 2012). In a study conducted in Ghana, it was revealed that women in the age brackets of 20-34 years had the highest of 55.7 percent of delivery in a health facility, whilst among women whose ages are less than 20 years, 54.2 percent delivered in health facilities and 49.6 percent for women 35 - 49 years (GDHS, 2008). Health facility delivery declines as women's age advances. This could be attributed to experience

accumulated by older women in childbirth which may make women think that it is unnecessary to give birth in a health facility. In another study in Nepal, women above 35 years old were less likely to attend to prenatal care, but utilise more of delivery and postnatal care (Starma, Sawangdee & Sirirassamere, 2007). A similar study carried out in Bangladesh found that assistance types utilised during labour did not vary significantly with respect to women ages (Paul & Rumsey, 2002). This implies age variation in women does not influence where women will choose to be delivered of their babies.

In a study in Ethiopia which compared the pregnancy outcomes of women of different age groups, it was found that teenage mothers formed a higher percentage of home deliveries compared to adult women and this occurred in rural settings (Negussie & Obare, 2001). Pregnant women who were less than 20 years recorded higher percentage (43.6%) of home delivery, while the percentage decreased as the age increased (Amardeep, Amir, Kaberi & Fred, 2008). The accessibility of health facilities in the rural setting compared to urban settings is challenging because of limited number of these facilities together with health staff. This may compel teenagers to choose home delivery. Age is often considered as a proxy accumulation of experience including the utilisation of health care services. There is the likelihood that older women may be advised to seek skilled attendants during delivery since so much biological risk is associated with women who are advanced in age at the point of labour. However, older women are likely to belong to a traditional cohort who may find the use of modern maternal health care services unattractive (Sabine & Oona, 2009).

Therefore age of women has a positive association with delivery at health institutions.

From the study findings of Alemayehu, Fekadu and Solomon (2012) which was conducted in Ethiopia's district of Sekela it was found that mothers within age 15-24 years were about four times more likely to give birth in a health institution other than their counterparts within age 35 years and above. This is similar to the North Gondar zone in Ethiopia where a study showed higher delivery utilisation by mothers within age 15-25 years as compared to 35 years and above. This is also consistent with study results in Asayta which indicated younger mothers being more likely to utilise maternal health care service at delivery than older mothers. From these studies, age appears to show differences in where a woman is delivered of a baby, but there is the need to consider where these studies were conducted since studies in urban and rural settings may not show the same results with respect to age and place of child birth. This is because in an urban setting, availability and accessibility and information regarding benefits of health facility delivery may be more than it may be found in rural communities.

Marital status

Place of last delivery is also likely to be influenced by a woman's marital status since marriage may influence a woman's autonomy and status. Women who are single or divorced may not be financially sound but stand a better chance of enjoying greater autonomy than married women (Letamo & Rakgoasi, 2003). There is the possibility that young single mothers may seek skilled attendants

since they may still be catered for by their natal family but these single younger mothers may be stigmatised and therefore, they may prefer to be delivered of their babies at home for fear of negative health provider's treatment at the point of labour (Sabine & Oona, 2009). Marital status may influence place of delivery probability via its influence on autonomy and status or through financial resources. Single women may be poorer than those currently married. Several studies have suggested that marital status is not statistically significant with skilled attendance (Gyimah & Takyi, 2006). Thus, it cannot be concluded that married women are definitely those who will patronise health facility delivery more than their counterparts who are single. This is because if a woman's partner is not financially sound or enlightened in terms of benefits of health facility delivery, it may not impact positively on a woman's delivery in a health facility. Hence, marital status, per say, may actually not influence positively a woman's choice of health facility delivery. A partner needs to be enlightened with regard to the importance of health care services and be financially sound to influence decisions of his wife to seek delivery at a health facility.

Ethnicity and religion

It is believed that one's ethnicity and religion serve as the markers of an individual's cultural background hence are likely to influence peoples' beliefs, norms and values in connection with childbirth and health service utilisation (Sabine & Oona, 2009). There is the possibility that certain religious and ethnic groups may be discriminated against by health personnel and this may deter them from the use of health care service observed by Geli, Goldman and Rodriguez,

(2003), women may avoid health facility delivery due to cultural restrictions or specific childbirth requirements related to their culture such as position of delivery, handling of placenta and provision of warmth. In some parts of Africa, the belief is that obstructed labour is a signs of infidelity and this hinders care seeking. It is also believed that child birth is a point of testing women's endurance and if care is sought, it could be a sign of weakness. This could be a reason for some women choosing to deliver a baby (Gabryseh & Cambell, 2009).

In Ghana, differences in various ethnic groups' use of skilled care have not been explored (Sabine & Oona, 2009). Further, difference in the use of health facility delivery had not been found among various ethnic groups. However, the literature of some studies differences in the use of health facilities for delivery among ethnic and religious groups showed disparities based on the norms and beliefs regarding health facility delivery.

Birth order/parity

With regard to birth order and the use of health care services, studies have indicated a strong influence between the parity of women and the utilisation of health care services. One of such studies conducted in Turkey indicated that nulliparous women are more likely to utilise prenatal care service and access assistance from a skilled birth attendance during delivery than women with higher child birth order (Celik & Hotchkiss, 2000).

In the Philippines, a study revealed that the probability of either choosing to access public or private modern health care service instead of traditional health care declines as the number of parity of a women increases from zero to six

(Wong, Popkin, Guilkey, 1987). Some explanations that could be attributed to this are that women in the course of their first pregnancies are very cautious about the outcome of such pregnancies and seek the attention of trained health professionals during the pregnancy and even at delivery whereas increase in childbirth makes women reluctant to use modern maternal health care services but rather depend on past experiences. Another factor issue is that the higher birth order and family size tend to exert pressure on limited family resources and this could impact negatively on women's choice of modern maternal health care services.

In Bangladesh, home delivery is more commonly associated with lower parity of three or four rather than a higher parity of five or more (Mahfuzar, Shahidur & Syeda, 2008). Studies have shown that in Sokoto and Enugu States in Nigeria, women with high parity have greater preference for home delivery with untrained skilled attendants (Ekele & Tunau, 2007; Amardeep, Amir, Kaberi & Fred, 2008).

Women with a lower birth order are more likely to be delivered their babies in a health service facility compared to women with a higher birth order. A study in Sekela of Ethiopia showed low birth order to account for high health facility delivery than women with higher birth order (Alemayehu, Fekadu & Solomon, 2012).

Women with higher parity are already experienced and may feel no need to seek health professional assistance if their previous deliveries were uncomplicated. On the other hand, women with many young children may have greater challenges in attending facility due to the need to arrange for child care. In

the case of China, the one-child-policy scares mothers with higher birth order pregnancies from attending health care services for fear of being punished (Sabine & Oona, 2009).

Findings of a study in China showed women who were delivered of their babies at health facility declined as their number of birth order increased. Women with birth order 3+ were 31.7 percent to have delivery at health facility, while women with birth 1 and 2 were 77.2 percent and 57.4 percent respectively to be delivered at health institution (Xing, Ling, Yan & Carine, 2011). It is possible that women experiencing first birth may wish to have their babies delivered at a health facility other than those who have had several birth experiences. This might be so due to the uncertainty of that first delivery experience. It may also be that women who have had a number of birth experiences may be so confident in themselves because of successful experiences and will wish to have their babies delivered outside a health facility. The experience of a woman during past deliveries from health staff will also suggest whether she will ever like to have a health facility delivery. Notwithstanding all these, the level of a woman's education, level of enlightenment, availability and accessibility of health facility could also influence where she is likely to be delivered of her baby. The parity of the woman alone does not necessarily decide where she will deliver.

Socio- economic factors

Women education

Women education is a crucial determinant in the utilisation of heath facility during delivery. According to the Ghana 2011 MICS report, more

educated women are more likely to have their babies delivered at a health facility and with assistance of a skilled attendant than the less educated. For instance, only 44 percent of women with no education have their babies delivered at a health facility with the assistance of skilled personnel as compared to 95 percent with secondary or higher education. It was, however, interesting to note that younger age women were more likely to deliver at a health facility with the assistance of skilled personnel than older women (GSS, 2012).

Findings from a study in Nigeria indicated that women with higher educational status are likely to seek health facility delivery (Ekele & Tunau, 2007). In Zaria a semi urban settlement in Nigeria, an increase in home delivery was associated with low maternal education (Idris, Gwarzo & Shehu, 2006). Educated women are more likely to have their babies delivered at a health facility and attended to by skilled health professionals than they uneducated women. This was revealed in a study of trends and use of skilled attendants by Luc, Carla & Wim, (2003). Furthermore, from an antenatal care provision study in India it was revealed that women with higher education are more likely to attend health facilities to access maternal health care (Pallikadavath, Foss & Stones, 2004). A cross-sectional survey in Nepal on the pattern of women delivery indicated that women with low education are those with increased home delivery (Valley, 1999). In a national survey in Maharashtra, women with no formal education recorded the highest home delivery of 55.9 percent compared to only 7.8 percent among women with more than secondary education (Amardeep, Amir, Kaberi & Fred, 2008).

Education plays an important role in the place women choose to have delivery. There is a positive relationship between the educational level of a woman and her use of maternal health care services. Several studies are supportive of this assertion. For example, in a study in a Madhya Pradesh State, India, a strong relationship was found between mother's education attainment and delivery at a health facility using of skilled attendant. Women with secondary education and above were 2.35 times more likely to receive delivery at a heath facility with a skilled birth attendant compared to illiterate women (Tej, Nawi & Miguel, 2011). In a hospital birth study in China, between 1988 and 2008, a positive association for health facility delivery among women was shown. Women with no education were 34.1 percent to deliver their babies at a health facility, while women with college education is 97.4 percent (Xing, Ling, Yan & Carine, 2011). Women with education are perceived to have higher awareness of maternal health services. They are equally on a higher side of better knowledge and information regarding modern medications and the capacity to recognise specific ailments. Women are empowered through education and for that matter tend to have greater confidence and so more capable of making decisions on modern health care services for themselves and their children (Caldwell, 1999; Schultz, 1984).Women's education is associated with their use of maternal health care, from the study findings of Yared and Mekonnen (2002), it is seven times higher in odds ratio for a woman with at least secondary education to be delivered in a health facility.

Women occupation

In developing countries, the principal barrier to women having control over their reproductive health is their over dependence on men for economic survival. To ensure that women have control over their reproductive health is to empower them to be more economic independent and to have control over their communities and households. There can be an increase in women's economic status and autonomy regarding their reproductive health status if they are gainfully employed. Also, this will raise their awareness and give them greater access to new ideas, opportunities and behaviours as a result of their interaction with people outside their communities and homes (Sharma, Sawangdu & Sirrassamere, 2007).

In a study by Magadi, Madise and Rodrigue (2000), women who are into paid employment tend to start reporting earlier for antenatal care visits more than those who are not into paid employment. This could be due to their movement outside their communities and households and this offers them the opportunity to have much knowledge regarding pregnancy and childbirth. Aside, they are able to seek information on pregnancy care at the work place. However, women into paid employment do not necessarily associate with the greater utilisation of maternal health care service. For instance, in the case of Nepal, non-working women are economically better off than women into paid employment. But in the case of most developing countries, women's work is largely associated with poverty and therefore, tends to have negative influence on their utilisation of health care services (Sharma, Sawangdee & Sirirassamere, 2007).

Women who are not economically engaged showed higher response of utilisation of delivery service at a health facility more than women in government and other employment (Alemayehu, Fekadu & Solomon, 2012).Women into economically paid jobs stand a better chance to access health facility delivery. In many settings of developing countries, women do not earn an income for work done especially family work and those who even earn income do not control it. Women in formal occupation tend to be more mobile, and for that matter, have a better access to information.

This suggests why women in formal occupation may utilise health facilities. Several studies found women in farming as less likely to patronize health facility and skilled delivery compared to women into other occupations. On the contrary, in two Southern states of India and Nepal, working women were less likely to use health care services at delivery as compared to non-working women. In Bangladesh, a large differential in delivery service favoured women who were gainfully employed and who lived more than one hour travel time away from a health facility (Sabine & Oona, 2009).

Partners' education

Utilisation of health care services by a woman could be reflected from the husband's educational level. This is because the attitude of a husband regarding modern health care utilisation could influence the wife's decision as to whether to seek or not seek modern health care services. Men with higher educational attainment are likely to play a crucial role in taking decisions with respect to child care as compared to men with less or no schooling (Caldwell, 1979). A study in

India revealed that education has the greatest and significant impact on the utilisation of health care services. Education increases the probability of usage of pre and postnatal care by 10 percent and 8 percent respectively and the probability of being delivered of their babies by a trained health professional (Shariff & Singh, 2002). From a study in Madhya Pradesh state in India, women married to men with low educational background were associated with lower use of health facility and skilled attendance at delivery. Educated husbands might support women access to maternal health services (Tei, Nawi & Miguel, 2011). Husbands who are educated are more exposed to modern maternal health services and are quite aware of the benefits of skilled attendance and stand a better chance of communicating with health personnel and demand for appropriate health care. Educated husbands are less likely to put constraints on their wives' decision-making and mobility and these will facilitate health care seeking by wives. There is an association between a husband's education and his occupation and household wealth. From many study results, husband's with higher education is associated with wives' use of skilled birth attendant. The educational level of a husband can play a vital role in influencing health facility delivery of his wife. Since education serves as an eye opener, it will let husbands play decisive roles in suggesting and supporting their spouse to choose being delivered at health facility.

Partner occupation

In rural Bangladesh, a study showed that husbands who are employed in non-agriculture depended on trained health professionals for their babies delivery

as compared to husbands in agricultural employment (Paul & Rumsey, 2002). Similarly, another study in Bandgladesh revealed women whose husbands were into businesses or services were more likely to use health care professionals for delivery and to treat their complications (Chakraborty, Islam, Chowdhury & Bari, 2002).Women whose husbands have a higher occupational status are able to access health facilities for delivery. Higher status occupations are associated with greater wealth which makes it possible for medical expenses to be paid. In Haiti, for instance, mothers were found to be less likely to have an institutional delivery especially when the husband was the sole contributor of all or majority of household expenses. However, in Turkey, studies did not find any relationship between husband occupation and the use of institutional delivery by women (Sabine & Oona, 2009). The point is that in most traditional settings, husbands/partners are the breadwinners of the homes and for that matter should be in occupations that are well paid, to enable them take up their financial obligation as heads of households. It is assumed that once a husband/partner is financially sound, he will definitely support his spouse in her maternal medical expenses.

Other factors

Women's autonomy

Autonomy has a significant influence on women's utilisation of health care services. Autonomy of women can be looked at in various dimensions in the households. These may include mobility, power, financial independence and decision making power concerning women healthcare may influence their utilisation of health care services. It can be explained to be the capacity for an

individual to be able to manipulate his or her personal environment through access and control over information and resources so as to be able to make decisions concerning self or about close family relations. Hence, women's autonomy can thus be conceptualized as their ability to make decisions on their own with respect to issues and events concerning their lives, although at a point, they may be opposed by other women and men. Other dimensions of autonomy include freedom of movement, power to make decisions and control over finances. In South Asia, these dimensions of autonomy have strong influence over health service choices and utilization.

A study conducted in North India city revealed that among the poor and middle income women, women autonomy, which is measured as the extent of women freedom of movement, stands out to be one of the major determinants of the utilisation of maternal health care service (Bloom, Whypij & Gupta, 2001).

Findings from a study in Maharashtra State in India showed that permission to attend heath care by women had to come from husbands (Amardeep, Amir, Kaberi & Fred, 2008). Autonomy of women can be looked at in various dimensions in the households. In some countries, women's decision to seek health care is restricted since permission has to be sought from the husband of the woman or the mother in-law.

Women may equally lack the control over material resources required to pay for the expenses of health care. Additionally, women mobility may be restricted or they may not have the access to vehicles, bicycles or donkeys to transport them to the health facility (Sabine & Oona, 2009).

In most parts of Africa, women's decision making ability, especially with regards to issues of reproduction and sexuality, is extremely limited. Therefore, decisions concerning maternal health are either made by the husband or other family members (WHO, 1998). In several communities around the world; women do not have the right to seek health care without their husband or mother in-law's approval (Furuta & Salway, 2006). Women may not have control over household resources to enable them pay for healthcare expenses or may be restricted in mobility such as vehicles, bicycles or donkey (Mahdi & Habib, 2010).

Women's level of education can influence their level of autonomy in the home. Besides, women's level of financial standing at home can also have influence on her level of autonomy in her home, since her contribution to the family's upkeep gives her some right to be part of household decision making.

Physical distance

Physical distance of residence from a health facility exerts an influence on seeking to use the facility and an obstacle even after a decision has been made to seek service from the facility. Health facilities which are far from residence of a pregnant woman may discourage her from attempting to reach the facility at a point of labour since it is difficult to walk several kilometres at the onset of labour and besides when the road network is bad. The impact of distance is felt when there is no means of transport coupled with bad roads and when the woman is confronted with complications. Distance has a negative impact on accessing health facility during delivery especially when labour sets in unexpectedly or in the middle of the night with the absence of transport. In Cambodia, study findings

had it that there was no obstacle between the utilisation of health care facility and distance (Sabine & Oona, 2009). The findings that distance did not serve as a barrier to health care utilisation in Cambodia could be explained that transport in that country is not an issue or that the road network is fine.

Distance is a barrier to the utilisation of maternal health service as shown by findings from a study in Sekela district of North West Ethiopia that a travel distance of less than one hour attracted a higher number of women seeking home delivery (Alemayehu, Fekadu & Solomon, 2012). Most women in developing parts of the world, more particularly in the remote settings, are unable to access maternal health care services as a result of distance (Abraham, 2001). In Rakai district of Uganda, utilization of maternal health service was found to be hindered by the problem of inaccessibility (Amooti & Nuwaho, 2000). Accessibility of health care services is considered as being an important determinant of health service utilisation in most developing countries. One in every three women lives more than five kilometers from the nearest health facility (World Bank, 1994). Lack of transport and bad road networks hinder the movement of people and goods from one place to the other. Distance is a great factor that drives many women away from seeking delivery at health facilities. Distance to health facility is a significant factor that affects the choice of place of delivery and the utilisation of maternity services. Distance to a health facility has a dual influence on the use as a disincentive to seeking care in the first place and obstacle to reach health facility after a decision had been made to seek service. Distance becomes a strong obstacle when there are no mean of transport coupled with bad roads.

Delivery assistance

According to the 2011, MICS for Ghana, about two-thirds (68 percent) of women aged 15-49 years who gave birth in the last two years were delivered of their babies at a health facility with the assistance of a skilled personnel. Also 2 in 3 representing 67 percent were delivered of their babies in health facilities. From Kenya, Demographic and Health Survey in 2008, delivery at a health facility with assistance from skilled personnel declined consistently as the year's progress with 50 percent in 1993 to 44 percent of births in 2008. Traditional birth attendants accounted for 28 percent, with 21 percent being assisted by relative and friends, while 7 percent women delivered their babies by themselves. From a study in selected health facilities in Nyandarua, south of Kenya, it came to light that a high proportion of women gave birth outside health facility without skilled health assistance. However, this estimate is considered lower than that observed in the West Province (18 percent) which is almost twice the national average of 8 percent (Carol, Moses, Evans, Gabriel & Zipporah, 2011).

In Ethiopia, the proportion of births at a health facility and attended to by skilled health personnel is far lower than that of sub-Saharan Africa. Even among women who have access to maternal health services, the proportion of births in health facilities recorded was still low. Deliveries in health facility were only 6 percent which is not significant in terms of delivery proportions in service utilisation between Ethiopia Demographic Health Surveys [EDHS] in 2000 and 2005. However, there was a moderate increase in EDHS 2011 by 10 percent. Deliveries handled by TBA's was 28 percent with the majority of deliveries

attended to by relatives or other persons, 61 percent, and 5 percent of them not assisted by anyone (Alemayehu, Fekadu & Solomon, 2012). Assistance received during delivery in health facilities tends to assure women of their safety but assistance can only be received if women avail themselves at a health facility at the time of delivery. This can also be if they feel there is the need to seek assistance at the time of delivery and the presence of these facilities.

Health factors

A study by International Medical Cooperation Committee [IMCC] and SAVE in Wellembelle in the Sissala East District of the Upper West Region of Ghana revealed that women in labour who visit health facilities for labour were mishandled in the process of labour some of these cases include slapping them and yelling at them. This mishandling kept them away from health facilities during labour. They feel if traditional birth attendants could provide a similar service why go to a health facility (IMCC & SAVE, 2009). In the West Gonja District of the Northern Region of Ghana, a study brought to light that skilled birth attendants were unfriendly towards clients. The unfriendly behaviour included harsh, insolent and abusive behaviour during labour while preferential treatments are given to expensively dressed clients (Esimai, Ojo & Fasubaa, 2002). In rural Tanzania, health staff attitudes remain a hindrance to women accessing skilled professionals' health service during childbirth. The poor attitude of health service providers such as abusive language, fear of punishment, denying service, lack of compassion and refusal to assist accounts for the lack of patronage

of health facilities (Mrisho, Schellenberg, Mushi, Obrist, Mshi, & Tanner, 2007). The attitude of health staff towards clients at the point of health delivery is vital in determining their patronage of health service. If clients are not properly handled or treated at the point of seeking service, they may be discouraged to go back for such service even if the need arises.

Socio- cultural factors

Another factor that may influence women's utilisation of maternal health care services, especially in Africa, is the socio-cultural background of women. According to Addai (2000), medical need is not only determined by the physical presence of the disease but the cultural perception of the illness. In many rural settings in Africa, maternal health services coexist with indigenous health care. Women, therefore, have the option to decide which one to go for. Some cultures have beliefs related to maternal health utilization, especially at the point of delivery, since they forbid the privacy of their women to be seen by a second person other than their husbands/partners.

Conceptual framework

Andersen's (1995) conceptual frame work of behavioural model of health services utilisation was originally designed to investigate determinants of maternal health care utilisation. This model indicates the multiple factors that influence the utilisation of health care services and has been used to understand the utilisation of health services in both developed and developing countries.

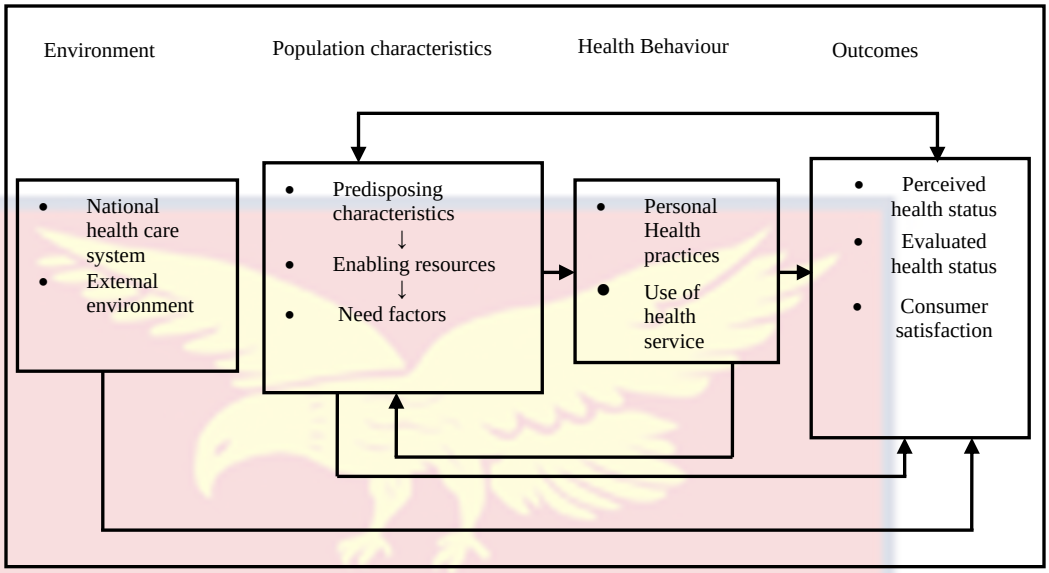


Fig1: Conceptual frame work on behavioural of health service utilisation

Source: Andersen's (1995)

The study model on maternal health care utilisation is adapted from the Andersen conceptual frame work. In the context of this study the conceptual framework was adapted based on the variables with respect to the current study.

Four major elements described in the model which influences health care utilisation are environment factors, population characteristics, health behaviour and outcome.

From the context of this study, it can be affirmed that women place of last delivery is influenced by the four major factors of the conceptual frame work and they are environmental factors which constitutes national health system and external environment. Population characteristics which also constitute predisposing characteristics which is further made up of demographic factors, social factors which comprises of sub factors such as resources to access health facility, education, occupation, ethnicity, marital status, partner education and

occupation. Health behaviour is made up personal health practices and the use of health services. The outcome factors, comprises of perceived health status which refers to how people view their health and functional state, their experience in the symptoms of illness, the pain and worries about their health and whether they consider it as a problem. The other sub outcome factor is the evaluated health status and this refers to the professional judgment about a person health status and the need for medical care, and lastly consumer satisfaction with health care services.

The adaptation of the conceptual frame work became necessary because the study could not cover the entire spectrum of determinants in the frame work, as a result of the insufficient data; therefore a modification of the frame work was created based on the data.

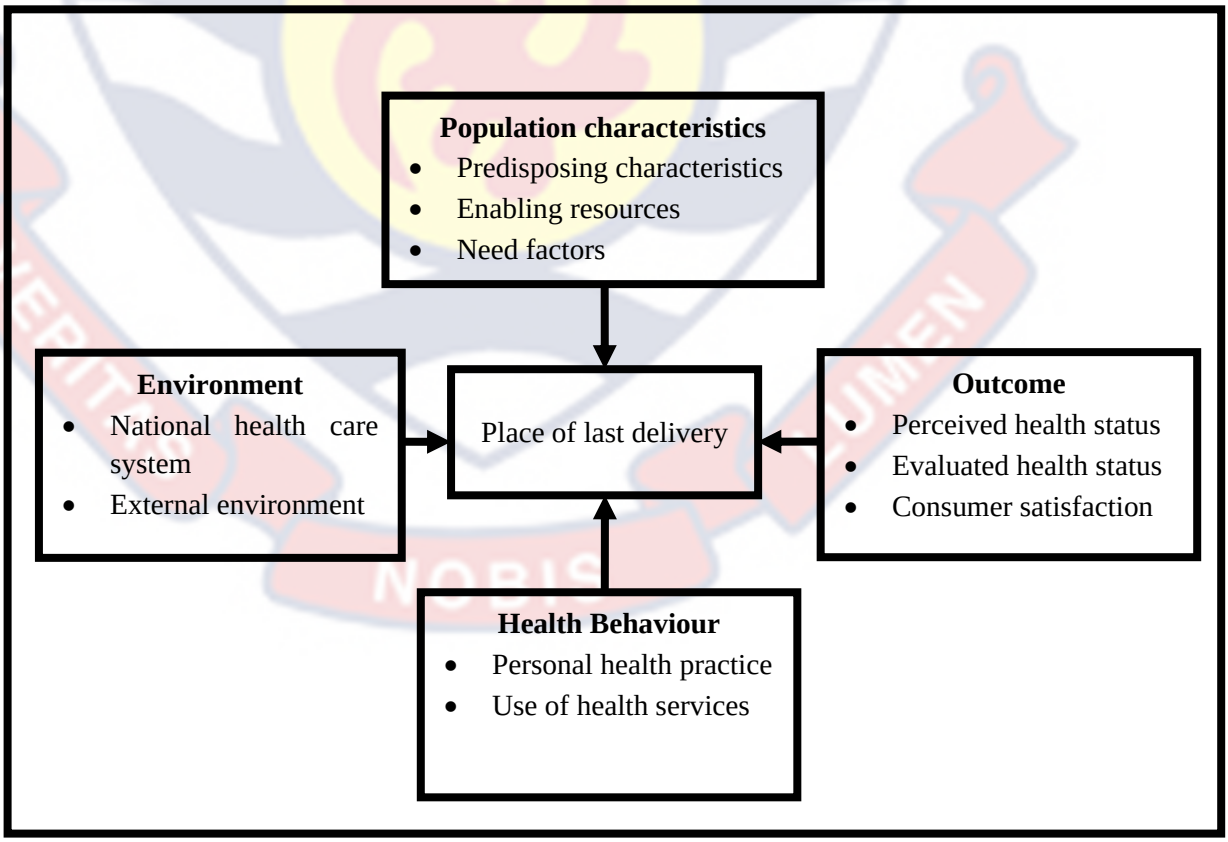


Figure 2: conceptual frame work of behavioural of health service utilization
Source: Adapted form Anderson (1995)

CHAPTER THREE

METHODOLOGY

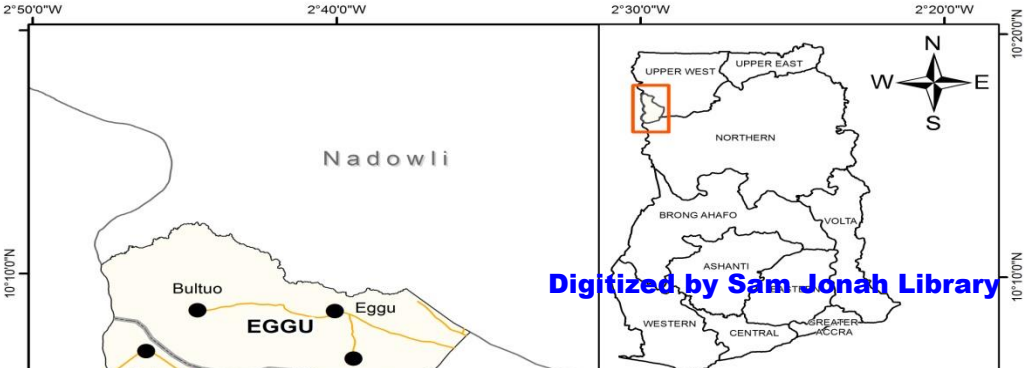
Introduction

This section of the thesis describes the procedure employed for the study. It also gives a brief but detailed description of the research design, study area, sampled units, sampling procedure, source of data, data collection instruments, pretesting, ethical issues and study limitations.

Study area

Location and size

The Wa-West District is among the current eleven districts of the Upper West Region. The district was created in 2004 by the legislative instrument 1751, with the district capital being Wechiau. The district capital is about 35 kilometers away from the regional capital. The district stretches from longitude 40^0N to 24^0S and from latitude 9^0W to 32^0W. It covers a land area of approximately 5899 kilometers square. To the South, North, and East, the district shares common boundaries with the Northern Region, Nadowli district and Wa Municipal Assembly and with Cote d' Ivoire to the West (Wa-West District Assembly, 2012).



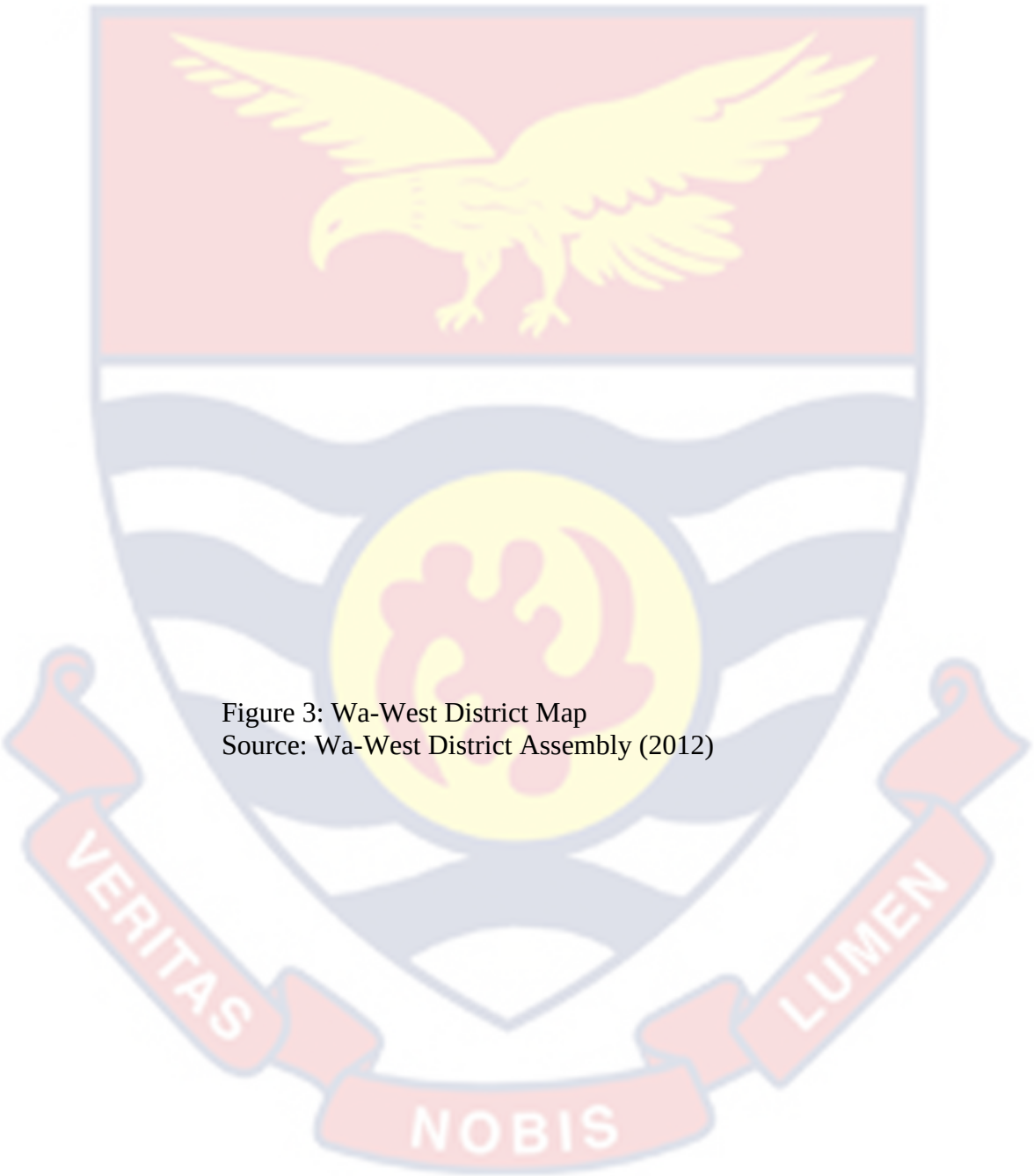


Figure 3: Wa-West District Map
Source: Wa-West District Assembly (2012)

Population

From the 2012 Population and Housing Census, the estimated total population of the district is 81, 348. Of the figure, male population is 40, 227

while female population is 41, 121. The majority of the population resident in the district is predominantly rural settlers. Common ethnic groups in the district are Brifo/Lobi and fewer Dagabaas/Wales. The major economic activity of the populace is agriculture.

Health sub-districts

In order to ensure an effective health service management under the Ghana health service structure, the district has been re-demarcated into six sub-districts (Fig.3). These sub-districts are Gurungu sub-district which constitutes twenty-nine communities, Lassia-Tuolu sub-district with thirty-four communities, Poyentenga sub-district with thirty-seven communities, Wechiau sub-district with forty communities, Dorimon sub-district with fifty-five communities and finally Eggu sub-district with twenty-four communities. The district has two hundred and nineteen communities (Wa-West DHMT, 2012).

Health facilities

The Wa-West District has five health centers, one private maternity home, one Christian Health Association of Ghana (CHAG), and fourteen Community Based Health Planning Services (CHPS) (Wa-West DHMT, 2012).

Strength of health staff

According to the sub-districts half year report of 2012 (GHS, 2012), there is one physician, nine professional general nurses, one public health nurse, forty-five community health nurses, six midwives, seven health aid/ward assistant, seven field technicians, one biomedical laboratory scientist, six enrolled nurses, eight registered general nurses, one psychiatric nurse, one ophthalmic nurse, six

technical officers, seventy-three health extension workers, eighteen security men and two drivers (Wa-West District Health Management Team [DHMT], 2012).

Education

As regards educational institutions in the district, there are no pre-school, there are twenty-two primary schools, twelve junior high schools and one senior high school. Between the periods of 2011 and 2012, the total enrolment for the district increased from 2865 to 3480. Educational institutions are believed to stimulate cognitive capacities of populace and more especially women in particular and have ability of influencing their choice of place of delivery (Wa West District Education Service Office [WWDESO], 2012).

Electricity

Electricity coverage in the district is estimated between 25-30 percent (VRA-Wa, 2012). Communities with electricity include Wechiau, Poyentenga, Nyoli, Ga, Dorimon and Lassia-Tuolu. The estimated percentage coverage of electricity in the district reveals that many communities in the district are still not connected to the national grid. Electricity is a very important social amenity that many institutions require to operate daily. Its deficiency will affect and slow many service deliveries in many sectors such as health sectors.

Water supply

Boreholes are the main supply of potable drinking water in the district. The challenge with these boreholes is that the number of population in the community who had to depend on a single borehole for water supply is too high.

Pressure and over dependent on these boreholes lead to their breaking down easily (District Assembly, 2012).

Road network

From Wa, the regional capital, the district capital can be accessed through three different routes. These routes are Ga, Chansa or Dorimon, but none of these routes leading to the district capital is tarred. The road network in some parts of the district is inaccessible especially during the peak of the rainy seasons. Accessible and motor able roads facilitate many economic activities including health care delivery. Roads that are motor able promote quick and easy transportation to health facility of patients and women in time of labour.

Religious systems

There are three main religions that are practiced in the district and these are Christianity (38.63%), Islam (23.52%) and Traditional religions (29.40%). The major religion is Christianity, followed by Traditional religion (Ghana Population and Housing Census [PHC], 2010). The religious beliefs and practices of some ethnic groups influence where their women should have their births and who should assist in the delivery of their babies. This is because some religions forbid the nakedness of women to be seen by other individuals, especially males. These usually prevent women from going in for health facility delivery.

Study type and design

Both quantitative and qualitative methods were employed in the study. As the study sought to assess factors that influence women choice of place of delivery, a cross-sectional survey was used to obtain the desired information from sampled population. Data collection was based on face to face interview of respondents. This was made possible with the aid of structured questionnaire for quantitative data to be collected, while qualitative data was collected with the aid of an interview guide.

Source of data

Data for the study was from primary sources. Structured and semi-structured questionnaires used to collect quantitative data, while interview-guide for qualitative data.

Sampling units

Sampling units refer to units of a study which allow for sampling. Sampling units could be units or group of units to be selected for a study. The sampling units for the study was a cross-section of women aged15-49 years, who had experienced at least a single live birth in the sampled communities of the sub-districts three years prior to the study. The study, however, left out women who fell out of the age group of the study, those who had not experienced childbirth, those who were not mentally fit and those unwilling to be part of the study.

Sampling procedure

The absence of a complete list of households with women within the reproductive age 15-49 years and who had experienced at least a single live birth compelled the researcher to consider the six sub-districts as strata. Proportional sampling was used to determine the number of communities that were to be considered in each sub-district and the number of eligible women that were to be considered in each selected community. Convenient sampling technique was then finally used to pick each eligible woman for the interview. The list of the six sub-districts together with their respective communities was obtained from the Wa-West District Health Administration. A total of thirty communities were randomly selected from two hundred and nineteen communities that constituted the six sub-districts.

The communities that were sampled from each sub-district for the study are as follows: Gurugu sub-district communities, Saaro, Nakaayiri, Tanziiri, Solombo, and Joropeteyiri. Lassia-Tuolu sub-district communities, Kandew, Wolloteng/Nazieyir, Bakuroteng, Varimpere, and Ollateng. Poyentenga sub-district communities, Gadi, Tambile, Domagile, Tecdoma, and Jedo. Wecdiau sub-district communities Tokali, Dalanyiri, Kantu, Mwaakpa, and Tanvaari. Dorimon sub-district communities, Guse, Dantanga, Paala, Nadizie, and Yizie and finally Eggu sub-district communities, Zang, Sukpere, Dabozie, Zinye and Tendabori (Appendix II).

The reason for designating sub-districts as strata was that it allowed for independent sampling in each of the stratum. The intent of this form of sampling was to provide the smallest sampling error and to enhance most information for

available resource. Sampling of women for the required information was by convenient sampling technique where a participant was chosen with her sole concern. This allows for ease of access since this method allows obtaining quick information and more over it is inexpensive (Gordor, Akar, & Howard, 2006).

Sample size determination

The sample size for the study was computed using single population proportion formula. The formula is used when p which is the probability of reporting units is estimated to have characteristics of interest that are not known. Also, when no preliminary surveys data are available, in such situations, the sample size should always be estimated for p=0.5.

The formula is stated as

$$n = \frac{Z^2pq}{d^2}$$

(Gordor, Akar, &Howard, 2006)

Where n is the sample size

Z is the confidence level

p is the probability of the reporting units estimated to have a particular characteristic of interest.

q is the probability of the reporting units estimated not to have a particular characteristics interest, derived as 1.0 – p.

d is the margin of tolerable error allowed. It represents the maximum acceptable difference between the estimate and the population value for a specified confidence level. The magnitude of the margin of tolerable error depends on how precise an estimate will be. However, the determination of the margin of tolerable

error is a subjective decision by the researcher. The margin of tolerable error could be two-sided or one-sided, two-sided when +_d and one-sided when + d (or –d). Equal probability was given to p and q for this sample size determination. Calculation is based on confidence interval level of 95%, z = 1.96, p = 0.5, q = 0.5 d = 0.05

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

Hence a total of 384 eligible women between 15- 49 years were sampled as there porting units for the study with respect to quantitative data.

Data collection technique

Interviewer questionnaire administering technique was employed to collect quantitative data. Interviews were conducted in English. Each interview began with an attempt to familiarise with the interviewee by creating rapport, which was meant to create a conducive and relaxed atmosphere for the interviewee to give responses to questions asked. After each rapport, respondents were given a brief but detailed objective of the study and assurance of confidentiality to any response that was made.

Quantitative Interview instrument

Quantitative data was collected with the aid of a questionnaire, which constituted both closed ended and opened ended questions. The sixteen page questionnaire contained seven modules comprising of women's choice of place of delivery, respondent's socio-(demographic and economic) characteristics, socio-culture aspect, women autonomy, availability of health information, birth order/parity, accessibility and proximity to health facility, and health

facilities/health service factors. Questionnaires were designed such that they concealed any information that might expose participants' identity (Appendix 1).

Pre-test

Questionnaires were pre-tested on a section of twenty eligible women in three Ghana health sub-districts communities which had not been sampled for the actual study, but had similar characteristics of the sampled communities in terms of ethnicity, infrastructure and social amenities. Pre-testing of questionnaires was meant to determine any wrong phrasing of questions. After the pre-test of questionnaires, it was detected that some questions in the questionnaire needed to be rephrased and some edited and improved for the main data collection.

Data processing and analysis

Questionnaires with quantitative information were edited, coded and captured with the computer using Statistical Package for Social Scientists (SPSS) version 17.0. Summary measures such as frequencies and percentages were computed. Descriptive statistics were employed to describe and estimate the significance of observations. Descriptive analyses included frequency tables on women socio-demographic and socio-economic profiles, delivery characteristic and women family members influence. Bar charts were used to present reasons for home and health facility delivery, distance from residence to nearest health facility and conditions that mainly influence choice of health facility home delivery. Finally, pie charts were used to depict traditional beliefs associated with health facility delivery, reasons for dissatisfaction with health care services, whether women were part of household decision-making and lastly, whether

women discuss with partners where to have their baby. Delivery characteristics are choice of place of delivery, place of last delivery and expected place of next delivery. Binary logistic regression was used to test the association between the three variables against women demographic, socio-economic, autonomy, accessibility/physical distance variables.

The second phase of the analysis was logistic regression analysis which consists of bivariate and multivariate. These tests were performed with an odd ratio at (95%) confidence intervals (CI) while statistical significance was defined as two-tailed test value of <0.05 in all analyses and reference point 1.0.

The analysis was first conducted on all study variables and secondly on group of variables with similarities such as socio-demographic, socio-economic, autonomy and accessibility / physical distance. The associations between each dependent variable on independent variables were reported based on two statistic of the regression analysis model, the odd ratios and the level of significance (P-value). The odd ratio (E(B) indicates the number of times an event is likely to occur, while the significant level of P-value is used to predict the probability of an event occurring or not occurring. It is also used to test hypothesis.

The module of logistic regression is given as:

$$Y = \frac{e^{a+B} + B_{2x2} + B_{3x3} \ldots . Bnxn}{1 + e^{a} + B_{1x1} + B_{2x2} + B_{3x3} \ldots B_{nxn}}$$

(Murray & Larry, 2000)

Where,

Y represents the dependent variable, and it should have two categories usually measured as 0 and 1

i = category of outcome

e^a = Natural 1og

a = constant or intercept

B = change in the probability ratios usually termed odd ratio

X represents the independent variables.

Qualitative interview and data analysis procedure

A purposive sampling technique was used to select participants for the in-depth interview with the help of an interview guide. The purpose for including a qualitative aspect to the study was to exhaust all means to unravel information that might not fully be covered by quantitative aspect of the study.

Information from in-depth interviews was audio-taped using a voice recorder. Interview responses from the recorder were later played for verbatim transcription and translated for analysis. Information was coded on segment based on research questions. Responses which emerged to form categories were developed and used to answer research questions.

Each interview began with creation of rapport between the interviewer and interviewee meant to create conducive and relaxed atmosphere for interviewees to give responses to questions. After that, brief but detailed objectives to the study were given and assurance of confidentiality made to interviewees. After which interview was began.

Ethical issues

Before the study was undertaken, ethical issues were addressed. Firstly, ethical approval for the study was obtained from the Wa-West District Health Administration. Secondly, verbal consent was sought from respondents to indicate their approval of participation.

Problems encountered on the field

The period for the data collection was not very appropriate since it was the period of the harvesting of farm crops. The problem it posed was that interviewers had to arrive early at the community in order to meet respondents. After10:00am onwards in a day most of the eligible respondents left for farms. They arrived very late from their farms, sometimes after 4 pm. Again, some women could not give their exact age or that of their partners, while some could not tell the educational level of partners. Estimates were made for uncertainties with ages by use of National Health Insurance Cards or antenatal cards.

Study variables

Both quantitative and qualitative variables were used to identify factors that influence women's place of last delivery within the reproductive age 15-49 years in the study area. The study variables are shown in Table1.

Dependent variable was place of last delivery. Categories are home delivery coded 0 while health facility delivery was coded 1 under the dependent variable.

Table1: Independent variables

Variable	Operational Definition	Scale of measurement
(Socio-demo)		
Age	Completed years of existence	Continuing
Sex	Categorised male and female	Nominal
Educational level	Years of continuous education	Discrete
Occupation	Job or profession	Nominal
Religion	Belief and system of faith	Nominal
Ethnicity	Origin by birth	Nominal
Marital status	Relating to marriage	Nominal
Socio economic	Average monthly income	Ordinal
Parity	Number of live children delivered	Discrete
Socio cultural factors	Taboos, practices, values and norms	Nominal

Table 1 cont. Independent variables

Geographical accessibility	Distance from residence to health facility	Discrete
Health service factors	Access, availability of service, cost attitude of health workers	Nominal
Available information	Advised on where to deliver	Nominal
Autonomy	Decision making power	Nominal

Source: Author, 2012

Table 2: Variables used in logistic regression analyses and their respective categories

Variable	Categories
1. Dependent variables	
• Place of last delivery	1 = Home 2 = Health facility
2. Independent variables Socio-demographic variables	
• Age of respondent	1 = less than 20 2 = 20 – 29 3 = 30 – 39 4 = 40 – 49
• Religion	1 = Christianity 2 = Islam 3 = Traditional 4 = No religion
• Ethnicity	1 = Dagaare/Wale 2 = Brifo/Lobi 3 = Other specify
• Marital status	1 = single 2 = Married
• Parity/No. of children	1 = 1 – 2 children 2 = 3 – 4 children 3 = 5 – 6 children 4 = 7+ children
Socio-economic variables	
• Respondent educational level	1 = No education 2 = Primary 3 = secondary +
• Respondent occupation	1 = farming 2 = Trading 3 = Other specify

Table 2 contd.

• Occupation of partner	1 = farming 2 = Trading 3 = other specify
• Educational level of partner	1 = No education 2 = Primary 3 = Secondary
• Average monthly income	1 = Below GH¢ 50 2 = GH¢ 50 – GH¢ 99 3 = GH¢ 100 and above
Are there traditional beliefs associated with childbirth in community	1 = yes 2 = No
Autonomy	
• Are you part of household decision making?	1 = Yes 2 = No
• Do you discuss with partner where to deliver?	1 = Yes 2 = No
• Do you have to seek partner approval to deliver at a health facility?	1 = Yes 2 = No
• Where dose partner prefer you deliver?	1 = Home 2 = Health facility
• Do family members influence place of delivery?	1 = Yes 2 = No
Accessibility and physical distance	
• Distance from residence to nearest health facility	1 = less than 1km 2 = 1 – 2 km 3 = 3 – 4 km
• Main means of transport to health facility	1 = foot 2 = Bicycle 3 = Vehicle
• Time it takes to reach the nearest health facility	1 = Less than 1 hour 2 = 1 – 2 hours 3 = 3 – 4 hours

Source: Field survey, 2012

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter discusses both quantitative and qualitative data. Quantitative analysis is made up of descriptive analyses and bivariate and multivariate analyses, while qualitative data analysed in content form and verbatim code of respondent.

Table 3: Respondent socio-demographic status

Variable	Number (384)	Percent (%)
Age		
15 – 19	14	3.67
20 – 24	55	14.44
25 – 29	82	21.52
30 – 34	93	24.41
35 – 39	104	27.08
40 – 44	29	7.61
45 – 49	7	1.84

Table 3 contd.

Religion		
Christianity	194	50.52
Islam	136	35.42
Traditional	27	7.03
No religion	27	7.03
Ethnicity		
Wale	157	40.89
Dagaare	162	42.19
Sissala	2	0.52
Brifo/Lobi	56	14.58
Other specify	7	1.82
Marital status		
Never married	8	2.1
Married	342	89.06
Separated	9	2.36
Divorced	7	1.84
Widowed	18	4.72
Parity/birth order		
1 child	65	17.43
2 – 3 children	102	27.35
4 – 5 children	125	32.55
6+ children	92	24.66

Source: Field survey, 2012

Socio-demographic characteristics of the respondents

Out of the 384 respondents, the common age group was 35 – 39 years (27.08%). Half of the women were Christians (50.52%) while the least group by religion were traditionalists and respondents of no religion (7.03%). The most dominant ethnic group was Dagaabas (42.19%) while Sissala (0.52%) was the least. Among all respondents, (89.06%) were married while (1.84%) was divorced. Having four or five children was common in about (32.55%). On the other hand, women with one child were the least (17.43 %), (Table 3).

Table 4: Respondent socio-economic status

Variable	Number(384)	Percent (%)
Educational level		
No education	286	74.48
Primary	42	10.94
Middle/JHS	37	9.64
SHS/Tech/Voc	16	4.17
Post-Secondary	2	0.52
Tertiary	1	0.26
Occupation		
Farming	244	63.54
Trading	77	20.16
Artisan	3	0.79
Seamstress	41	10.73
Public servant	6	1.57
Don't know	1	0.26
Other specify	12	3.14
Partner educational level		
No education	270	70.31
Primary	27	7.24
Middle/JHS	41	10.99
SHS/Tch/Voc	27	7.24

Table 4 contd.

Post-secondary	4	1.07
Tertiary	11	2.95
Don't know	3	0.80
Other, specify	1	0.27
Partner occupation		
Farming	300	78.13
Trading	26	7.01
Artisan	16	4.31
Public servant	17	4.58
Don't know	4	1.08
Other, specify	21	5.66
Average monthly income		
Below GH¢ 50	274	71.35
GH¢ 50 - GH¢ 99	88	23.85
GH¢ 100 - GH¢ 149	13	3.52
GH¢ 150 and above	9	2.44

Source: Field survey, 2012

Socio-economic characteristics of the respondents

Among the 384 interviewed, almost two-third (74.48%) had no education, while only (0.26%) had completed tertiary education. Seventy percent of respondents had no education. The majority of respondents were farmers (63.54%) while most of the women had partners who were farmers (78.13%). A greater number of the

respondents (71.35%) earned average monthly income below GH¢50, while fewer (2.44%) earned GH¢ 150+**,** (Table 4).

Respondent's place of last delivery

Most women indicated their last place of delivery was a health facility (58.59%) while home was (41.41%).

Table 5: Place of last delivery

Variable	Number (384)	Percent (%)
• Health facility	225	58.59
• Home	159	41.41

Source: Field survey, 2012

Women's autonomy at the household level

Women's involvement in household decision making

Being part of household decision making can influence where respondents give birth to their children. A respondent will have a say in deciding when and where a household member should be taken to a health facility to have delivery.

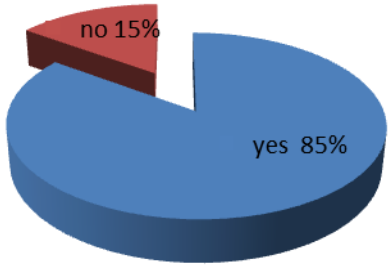


Figure 4 . Respondents' involvement in household decision making

Source: Field survey, 2012

Women's involvement in household decision making is presented in Figure 4. Eighty-five percent of women reported that they were involved household decision making while (15%) indicated that they are not involved in household decision making.

Women who discuss with partners where to give birth

This was to find out from respondents whether they are able to have discussion with their husbands/partners on where they should have their delivery.

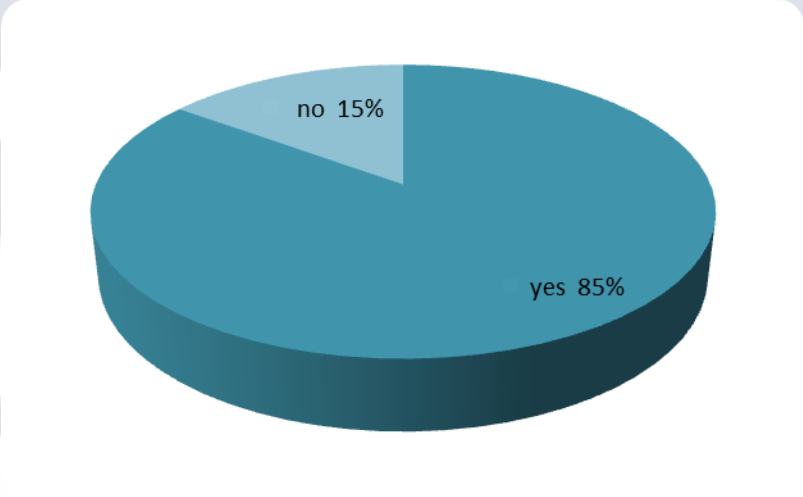


Figure 5. Women's involvement in discussion with partner regarding place of delivery

Source: Field survey, 2012

Figure 5 shows whether women discuss with their partners when pregnant where they will like to have their babies delivered, (85%) indicated yes while (15%) indicated no.

Family members who influence respondents' place of last delivery

Table 6 shows family members who influence respondents' place of delivery.

Table 6 : Family members' influence on place of last delivery

Variable	Number (276)	Percentage (%)
Mothers- in-law	91	32.97
Fathers- in-law	24	8.69
Both mother and father-in-law	23	8.34
Sister -in-law	38	13.76
Brother- in-law	22	7.98
Mother	46	16.67
Father	15	5.43
All the above	7	5.54
Other specify	10	3.62
Total	276	100

Source: Field survey, 2012

From Table 6, among respondents' family members who influenced their last place of delivery, most were (32.97%) mothers-in-law.

Reason for choice of place of delivery

Reasons for home delivery

In the study, reasons that were attributed to preference for home delivery are illustrated in Figure 6.

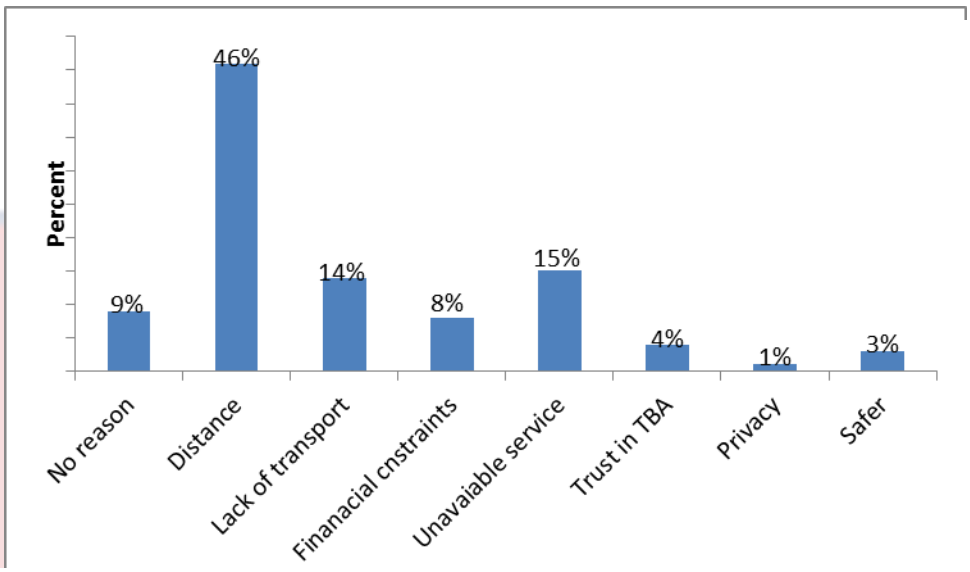


Figure 6. Reasons for home delivery

Source: Field survey, 2012

From Figure 6, the most mentioned reason for home delivery was distance from residence to health facility (46 %) and the least is privacy (1 %).

Reasons for health facility delivery

Respondents gave several reasons why they would prefer delivery in a health facility. Fifty seven percent (57%) of respondents mentioned safety and cleanliness as the reasons they would prefer delivery in a health facility.

Figure 7. Reasons for health facility delivery

Source: Field survey, 2012

Traditional beliefs associated with health facility delivery

Figure 8 shows traditional beliefs associated with health facility delivery. These perceptions are associated with women who choose to have delivery in a health facility.

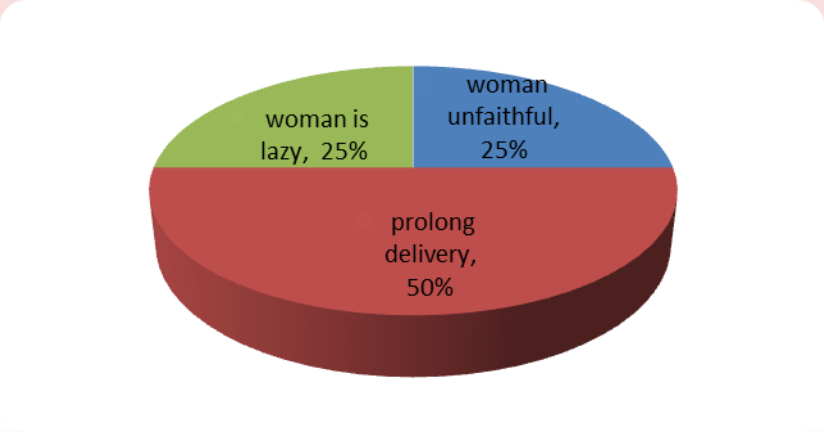


Figure 8. Beliefs associated with health facility delivery

Source: Field survey, 2012

From Figure 8, the following were the main traditional beliefs associated with health facility delivery; women who deliver in health facilities are lazy (25%), women who delivered their babies in facilities are unfaithful (25%) and women who delivered their babies in health facilities have prolong delivery (50%).

Distance from respondents residence to the nearest health facility

Distance is a factor that can influence women's last place of delivery especially when the distance is far. Hence, the study looked at how far it was from respondents' place of residence and the nearest health facility. As illustrated in the Figure 9.

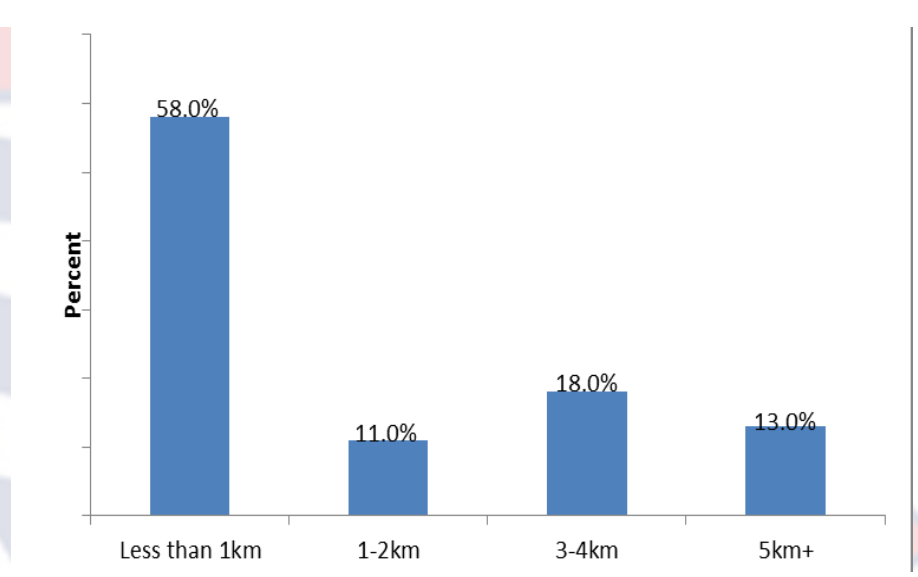


Figure 9. Distance from respondents' residence to the nearest health facility

Source: Field survey, 2012

Figure 9 shows the majority of respondents' place of residence to the nearest health facility was less than 1km (58.0 %), with the least being 1-2 km (11.0 %).

Determinants of women's place of last delivery in a health facility

The decision to give birth at a health facility can be influenced by conditions at the health facility. Figure 10 depicts conditions that mainly influence last place of delivery in a health facility attendance.

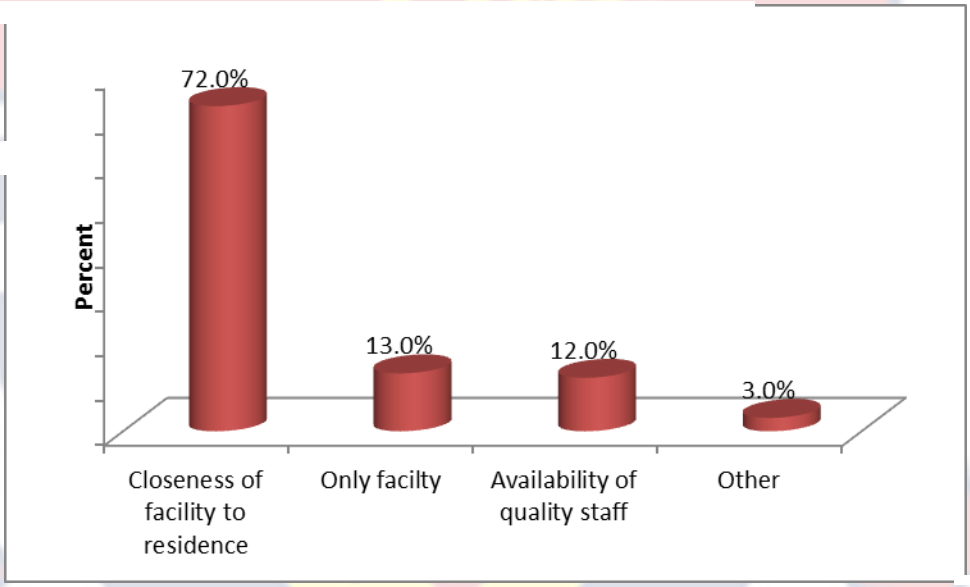


Figure 10. Factors that influence respondents place of last delivery in a health facility

Source: Field survey, 2012

Figure 10 indicates conditions that mainly influence respondents' last place of delivery in a health facility. Seventy-two percent of respondents indicated that closeness to health facility from their place of residence is the factor that influenced their delivery in a health facility, (13%) indicated the health facility was the only one in the community while (12%) indicated that the availability of

quality staff is the influential factor that determines their desire to have their last in a health facility.

Reasons for respondents' dissatisfaction with health care services

Some respondents indicated they were dissatisfied with health services care in their communities. Figure 11 illustrates the proportion of respondents dissatisfied with health services in their communities.

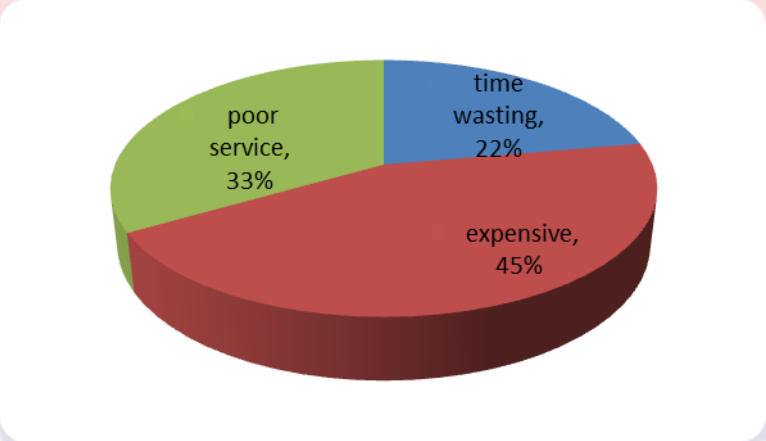


Figure 11. Respondents' dissatisfaction with health care services

Source: Field survey, 2012

From Figure 11, the majority were dissatisfied with health care services because of the expensive nature of service (45%). Other reasons were poor service (33%) and time wasting at health facilities (22%).

Place of last delivery by socio-demographic variables.

Table 7. Illustrates place of last delivery and socio-demographic variables of the respondents.

This is to ascertain how group similarity in variables will influence respondents' place of last delivery.

Table 7: Logistic regression analysis showing the bivariate relationship between place of last delivery by socio-demographic variables

Study variables	Place of last delivery* OR (CI)
Socio-demographic	
Age (Comp. yr., N=384)	p = 0.029**
Less than 20 (N = 14)	1.0
20 – 29 (N = 137)	0.33(0.11-1.02)
	p= 0.009
30 – 39 (N = 197)	0.23(0.07-0.69)
	p = 0.025
40 – 49 (N= 36)	0.21(0.05-9,82)
	p = 0.005
Religion (N=384)	p = 0.091**
Christianity (N= 194)	1.0
	1.30(0.83-2.04)
Islam (N= 136)	p = 0.250
Traditional (N = 27)	0.47(0.20-1.10)

	p = 0.080

Table 7 contd.

No religion (N = 27)	0.70(0.31-1.57)
	p = 0.391
Ethnicity (N=384)	p = 0.004**
Dagaare/Wale (N= 319)	1.0
Brifo/Lobi (N= 56)	1.06(0.40-2.80)
	p = 0.913
Other specify (N = 9)	0.41(0.22-0.78)
	p = 0.006
Marital status (N=384)	p = 0.004**
Single (N= 42)	1.0
Married (N= 342)	18(0.62-2.26)
	p = 0.640
Parity (N=384)	p = 0.002**
1 – 2 children (N = 123)	1.0
3 – 4 children (N = 117)	0.43(0.25-0.74)
	p = 0.001
5 – 6 children (N = 84)	0.38(0.21-0.68)
	p = 0.004
7+ (N= 60)	0.40(0.21-0.75)
	p = 0.000

*Home delivery coded 0 and health facility delivery coded 1

**p-value for main effects

Source: Field work, 2012

Older women within age groups of 20 – 29 years (OR = 0.33), 30 – 39 years (OR = 0.23) and 40 – 49 years (OR = 0.21) were less likely to have had her last birth in a health facility compared to younger woman (less than 20 years). A woman of other ethnic groups such as Sissala, Gonja (OR = 0.41) had lower chance of giving birth to her last baby in a health facility compared to woman of Dagaabas/Wale ethnic group. Also, a woman who had three and four children parity (OR = 0.43), five and six children parity (OR = 0.38) and 7 and more children parity (OR = 0.40) had lower likelihood to give birth in health facility in her last delivery compared to counterpart with one and two children parity, (Table 7).

Place of last delivery by socio-economic variables

Table 8 : Logistic regression analysis showing the bivariate relationship between place of last delivery by socio- economic variables

Study variables	Place of last delivery* OR (CI)
Socio-economic variable	
Education level (N=384)	p = 0.004**
No education (N = 287)	1.0
Primary education (N = 78)	1.56(0.93-2.62)
	p = 0.090
Secondary+ (N = 19)	7.44(1.69-32.81)
	p = 0.008
Partner edu. level (N=384)	p = 0.004**
No education (N = 267)	1.0
Primary (N= 71)	1.44(0.84-2.45)
	p = 1.87
Secondary+ (N= 46)	2.49(1.24-5.03)
	p= 0.011

Table 8 contd.

Respondents' occup. (N=384)	p = 0.004**
Farming (N = 231)	1.0
Trading (N= 121)	2.17(1.37-3.46)
	p = 0.001*
Other specify (N = 32)	1.23(0.59-2.59)
	p = 0.584
Partner occup. (N=384)	p = 0.004**
Farming (N = 285)	1.0
Trading (N = 64)	2.66(1.44-491)
	p = 0.002*
Other specify (N = 35)	1.33(0.65-273)
	p = 0.433
Average mth. income (N=384)	p = 0.004**
Below GH¢ 50 (N= 273)	1.0
GH¢ 50 – GH¢ 99 (N = 89)	1.58(0.96-2.60)
	p= 0.071
GH¢ 100+ (N= 22)	1.48(0.60-3.64)
	p = 0.395

*Home delivery coded 0 and health facility delivery coded 1

**p- value for main effects

Source: Field survey, 2012

A woman who had secondary or higher education (OR = 7.44) had a higher probability of giving birth in a health facility during her last delivery compared to her colleague with no formal education. A woman whose partner had secondary or higher education (OR = 2.49) had higher chance of giving birth

in a health facility in her last delivery compared to a colleague whose partner had no formal education. Results indicated women whose partners were traders (OR = 2.66) had higher chance to have had her last delivery in health facility compared to women whose partners were farmers, (Table 8).

Place of last delivery by autonomy

Respondents' autonomy at home could influence her place of last delivery. She could contribute to issues concerning her health and those of her household. Table 8 displays women's place of last delivery by autonomy at home.

Table 9 : Logistic regression analysis showing the bivariate relationship between place of last delivery by autonomy at household

Study variables	Place of last delivery* OR (CI)
Autonomy	
Are you part of house hold decision making (N=384)	p = 0.358**
Yes	1.0
No	0.66(0.27-1.60)
Do you discuss with partner where to deliver (N=384)	p = 0.000**
Yes	1.0
No	0.30(0.17-0.54)
Do you seek partner approval before delivery at a health facility (N=384)	p = 0.208**
Yes	1.0
No	1.30(0.86-1.96)

Table 9 contd.

Where does your partner prefer you to give birth(N=384)	p = 0.003**
Health facility	1.0
Home	3.25(1.50-7.08)
Do family members influence where you deliver? (N=384)	p = 0.003**
Yes	1.0
No	0.87(0.58-1.31)

*Home delivery coded 0 and health facility delivery coded 1

**p-value for main effects

Source: Field survey, 2012

From Table 9, a woman who failed to discuss with her partner where she would be delivered of her babies (OR = 0.30) had a lower chance of having her last birth in a health facility compared to a colleague who had discussion with her partner. If a partner was to decide on the place of preference child's for delivery (OR = 3.25) it had higher probability he would prefer spouse had her last birth at home compared to a health facility. A woman who responded no to family members influence in her last delivery (OR = 0.87) had lower chance of home delivery compared to those who response was a yes.

Place of last delivery by accessibility/ physical distance to the nearest health facility

The access and physical distance from place of residence to a health facility could influence positively or negatively on utilisation. There could be negative influence when distance is far with difficulty of getting means of transport.

Table 10 : Logistic regression analysis showing the bivariate relationship between place of last delivery by accessibility/physical distance variables

Study variables	Place of last delivery* OR (CI)
Distance from residence to nearest health facility (N=384)	p = 0.004**
Less than 1km (N = 218)	1.0
1 – 2km (N = 48)	0.44(0.23-0.82) p = 0.010
3 – 4km (N= 73)	0.67(0.39-1.16) p = 0.152
Over 5km (N = 45)	0.23(0.12-0.44) p = 0.000

Table 10 contd.

Main means of transport to health facility (N=384)	p = 0.004**
Foot (N = 299)	1.0
Bicycle (N= 50)	0.67(0.37-1.23)
	p = 0.195
Vehicle (N = 35)	1.40(0.67-291)
	p= 0.374
How long does it takes to reach the nearest health facility (N=384)	p = 0.005**
Less than 1 hour (N = 243)	1.0
1 – 2 hours (N= 71)	0.53(0.31-0.90)
	p = 0.018
3 – 4 hour (N= 70)	0.45(0.27-0.78)
	P = 0.004*

*Home delivery coded 0 and health facility delivery coded 1
**p- value for main effects
Source: Field survey, 2012

If a woman had to travel 1 – 2 km (OR = 0.44) and 5 km or more (OR = 0.23) she had a lower chance of having her last birth in a health facility compared to her counterpart who had to travel less than 1 km. Also, if a woman had to use 1-2 hours (OR = 0.53) and 3-4 hours (OR = 0.45) she had lower chance of having her last birth in a health facility compared to another woman who had to use less than 1 hour, (Table 10).

Place of last delivery by study variables

Multivariate analysis of place of last delivery by study variables to identify the interactive effect.

Table 11 : Logistic regressions analysis showing the multivariate relationship between place of last delivery by study variables

Study variables	Place of last delivery* OR (CI)
Socio-demo variables	
Age (comp. yr, N=384)	p = 0.498**
Less than 20 (N= 14)	1.0
20 – 29 (N = 137)	0.43(0.12-1.52)
	p = 0.189
30 – 39 (N = 197)	0.36(0.10-1.38)
	p = 0.136
40 – 49 (N = 36)	0.31(0.06-1.59)
	p = 0.160
Religion (N=384)	p = 0.824**
Christianity (N = 194)	1.0
Islam (N = 136)	1.18(.69-2.02)
	p = 0.556
Traditional (N = 25)	1.37(0.47-4.04)
	p = 0.563

Table 11 contd.

No religion (N = 27)	1.48(0.53-4.11)
	p = 0.451
Ethnicity (N=384)	p = 0.216**
Dagaare/Wale (N = 319)	1.0
Brifo/Lobi (N = 56)	1.41(0.42-4.76)
	p = 0.577
Other specify (N = 9)	0.50(0.21-1.19)
	p = 0.118
Marital status (N=384)	p = 0.004**
Single (N = 42)	1.0
Married (N = 342)	1.23(0.54-2.79)
	p = 0.626
Parity (N=384)	p = 0.940**
1 – 2 children (N = 123)	1.0
3 – 4 children (N = 117)	0.82(0.43-1.58)
	p = 0.558
5 – 6 children (N = 84)	0.82(0.36-1.86)
	p = 0.638
7+ (N = 60)	0.80(0.33-1.94)
	p = 0.623

*Home delivery coded 0 and health facility delivery 1

**p-value for main effects

Source: Field survey, 2012

Place of last delivery by study variables

A woman's autonomy in the household could influence her contributions to issues on her health and the health of members of her household.

Table12: Logistic regression analysis showing the multivariate relationship between place of last delivery by autonomy variables

Study variables	Place of last delivery* OR (CI)
Autonomy	
Are you part of household decision making? (N=384)	
Yes (N = 363)	1.0
No (N = 21)	1.26(0.38-4.16) p = 0.702
Do you discuss with partner where to deliver? (N=384)	
Yes (N = 326)	1.0
No (N =58)	2.59(0.96-6.95) p = 0.059

Table 12 contd.

Do you have to seek partner approval before delivery at a health facility? (N=384)	
Yes (N = 220)	1.0
No (N = 164)	0.27(0.13-5.70) p = 0.001
Partner preferred place of delivery? (N=384)	
Health facility (N = 352)	1.0
Home (N = 31)	1.35(0.81-2.24) p = 0.256
Do family members influence your delivery place? (N=384)	
Yes (N = 213)	1.0
No (N = 171)	1.0(0.61-1.65) p = 0.995

*Home delivery coded 0 and health facility delivery coded 1

**p- value for main effects

Source: Field survey, 2012

Results indicate that a woman who failed to seek her partner's approval (OR = 0.27) had less likely chance of choosing to have her place of last delivery in a health facility birth compared to a woman who sought partner's approval, (Table 12).

Place of last delivery by socio-demographic variables

This analysis was done to assess interactive effect of similar variables, multivariate analyses was generated on group variables to notice if similarities could influence significance.

Table 13 : Logistics regression analysis showing the multivariate relationship between place of last delivery by socio-demographic variable

Socio-demographic variables	Place of last delivery* OR (CI)
Age (comp. yr, N=384)	p = 0.401**
Less than 20 (N = 14)	1.0
20 – 29 (N=137)	0.38(0.12-1.20)
	p = 0.100
30 – 39 (N = 197)	0.36(0.11-1.21)
	p = 0.098
40 – 49 (N = 36)	0.33(0.08-1.44)
	p = 0.141
Religion (N=384)	p = 0.626**
Christianity (N = 194)	1.0
Islam (N = 136)	1.27(0.0-2.04)
	p = 0.311

Table 13 contd.

Traditional (N = 27)	0.75(0.30-1.86)
	p = 0.532
No religion (N = 27)	0.99(0.40-2.41)
	p = 0.977
Ethnicity (N=384)*	p = 0.138**
Dagaare/Wale (N = 319)	1.0
Brifo/Lobi (N = 56)	1.33(0.47-3.76)
	p = 0.596
Other specify (N = 9)	0.512(0.25-1.04)
	p = 0.064
Marital status (N=384)	p = 0.673**
Single (N = 42)	1.0
Married (N = 342)	1.17(0.57-2.38)
Parity /No. of ch. (N=384)	p = 0.110**
1 – 2 children (N = 123)	1.0
3 – 4 children (N = 117)	0.52(0.29-0.92)
	p = 0.025
5 – 6 children (N = 84)	0.50(0.25-1.01)
	p = 0.053
7+ (N = 60)	0.48(0.22-1.04)

p = 0.063

*Home delivery coded 0 and health facility delivery coded 1
**p – value for main effects
Source: Field survey, 2012

A woman who had three and four children parity (OR = 0.52) had a lower probability to give birth to their last baby in a health facility compared to another woman who had one and two children parity, (Table 13).

Place of last delivery by socio-economic variables

A multivariate analysis to assess the interactive effect of place of last delivery by socio-economic variables.

Table 14 : Logistic regression showing the multivariate relationship between place of last delivery by socio-economic variables

Socio-economic variables	Place of last delivery* OR (CI)
Edu. level of resp. (N=384)	p = 0.049**
No education (N = 287)	1.0
Primary (N = 78)	1.47(0.84-2.59)
	p = 0.181
Secondary+ (N = 19)	6.32(1.26-31.68)
	p = 0.025
Partner edu. level (N=384)	p = 0.831**
No education (N = 267)	1.0
Primary (N = 71)	1.16(0.65-2.07
	p = 0.607
Secondary+ (N = 46)	1.21(0.53-2.76)
	p = 0.659

Respondent occup. (N=384)	p = 0.070**
Farming (N = 231)	1.0
Trading (N= 121)	1.88(1.10-3.22) p = 0.022
Other specify (N = 32)	1.09(0.50-2.38) p = 0.822
Partner occup. (N=384)	p = 0.484**
Farming (N = 285)	1.0
Trading (N = 64)	1.49(0.73-3.06) p = 0.274
Others specify (N = 35)	0.91(0.42-1.97) p = 0.805
Respondent average mnth income (N=384)	p = 0.445**
Below GH¢ 50 (N = 273)	1.0
GH¢ 50 – GH¢ 99 (N = 89)	1.26(0.74-2.14) p = 0.401
GH¢ 1000+ (N = 22)	0.67(0.24-1.84) p = 0.431

Table 14 contd.

*Home delivery coded 0 and health facility delivery coded 1

**p – value for main effects

Source: Field survey, 2012

The results indicate that a woman who had secondary educational and higher (OR = 6.32) had a higher chance to have her last birth in a health facility compared to their colleagues with no formal education. Also, a woman who was a trader (OR = 1.88) had a higher probability of having her last birth in health facility compared to colleague who was farmer, (Table 14).

Place of last delivery by autonomy at household

Multivariate analyses to assess interactive effect of place of last delivery by autonomy at household.

Table 15 Logistic regression analysis showing the multivariate relationship between place of last delivery by autonomy variables

Study variables	Place of last delivery* OR (CI)
Autonomy	
Part of household decision-making (N=384)	
Yes (N = 363)	1.0
No (N = 21)	1.26(0.38-4.16) p = 0.702
Discuss with partner where to give birth (N=384)	
Yes (N = 326)	1.0
No (N = 58)	2.59(0.96-6.95) p = 0.059

Table 15 contd.

Seeks partner's approval before delivery at a health facility (N=384)	
Yes (N = 220)	1.0
No (N = 164)	0.27(0.13-5.70)
	P = 0.001*
Partner's preferred place of delivery (N=384)	
Health facility (N= 352)	1.0
Home (N = 31)	1.35(0.81-2.24)
	p = 0.256
Family members' influence choice of place delivery (N=384)	
Yes (N= 213)	1.0
No (N = 171)	1.0(0.61-1.65)
	p = 0.995

*Home delivery coded 0 and health facility delivery coded 1
**p – value for main effects
Source: Field survey, 2012

A woman who did not seek partner's approval (OR = 0.27) had a lower chance of having her last birth in a health facility compared to a colleague who sought partner's approval, (Table 15).

Place of last delivery by accessibility/physical distance variables

Distance from a person's residence to a health facility could influence positively or negatively on utilisation of a health facility. Influence is great and negative if distance is far and there is no means of transport. Results on Table 16 are multivariate of women place of last delivery by accessibility/physical distance.

Table 16 : Logistic regressions analysis showing the multivariate relationship between place of last delivery by accessibility/physical distance variables

Variables	Place of last delivery* OR (CI)
Distance from your residence to nearest health facility (N=384)	p = 0.004**
Less than 1km (N= 218)	1.0
1 – 2km (N = 48)	0.45(0.20-1.00) p = 0.050
3 – 4km (N= 73)	0.74(0.30-1.82) p = 0.511
Over 5km (N = 45)	0.23(0.09-0.59) p = 0.002

Table 16 contd.

	p = 0.337**
Main means of transport to health facility (N=384)	
Foot (N = 322)	1.0
Bicycle (N = 48)	0.88(0.44-2.76)
	p = 0.715
Vehicle (N = 34)	1.72(0.75-3.93)
	p = 0.199
Time it takes to reach the nearest health facility (N=384)	p = 0.910**
Less than 1 hour (N =241)	1.0
1 – 2 hours (N = 69)	0.93(0.45-1.93)
	p = 0.855
3 – 4 hours (N= 74)	0.82(0.34-2.02)
	p = 0.670

*Home delivery coded 0 and health facility coded 1

**p – value for main effects

Source: Field survey, 2012

A woman who had to travel 1 – 2 km (OR = 0.45) and 5 km or more (OR = 0.23) had a lower probability of having her last birth in a health facility compared to a colleague who had to travel less than 1 km, (Table 16).

Qualitative results

In-depth interviews were conducted among thirty participants. Relevant information was collected through free participation and active expression of ideas. Interview themes were identified and content analysed.

Table 17 :Respondents' socio-demographic variables from in-depth interview

Variables	Numbers (30)	Percent
Age		
15- 19	5	16.7
20-24	5	16.7
25-29	7	23.3
30-34	3	10.0
35-39	7	23.3
40-49	3	10.0
Religion		
No religion	2	10.0
Traditional	2	7.0
Islam	7	23.3
Christian	8	26.7
Ethnicity		
Dagaabas	8	26.7
Wale	6	20.0
Brifo/Lobi	6	20.0
Marital status		
Married	27	90.0
Single	3	10.0
Parity		
1 child	2	6.7
2 children	2	6.7
3 children	9	3.3
4 children above	25	83.3

Source: Field survey, 2012

Socio-demographic variables

Socio-demographic characteristics of the thirty participants interviewed show that those between 25-29 years and 35-37 years (23%) were more than any other age group. Participants of Christian faith were more (27%). Although ethnic groups such as Sissala, Brif/Lobi were part of those interviewed, Dagaabas ethnic group, dominated (27%). The majority of participants constituting (90%) were married. Most women (83%) have four or more children, (Table 17).

Table 18 is a presentation of the socio-economic characteristics of participants in in-depth interview.

Table 18 : Respondents' socio-economic variables from in-depth interview

Variables	Numbers (30)	Percent
Educational level		
No education	20	66.7
Primary	5	16.7
Middle/ JHS	5	16.7
Occupation		
Farming	27	90.0
Trading	3	10.0
Partner education		
No education	20	66.7
Primary	7	23.3
Middle/ JHS	3	10.0
Partner occupation		
Farming	27	90.0
Trading	3	10.0
Average monthly Income		
Below GH¢50	29	96.7
GH¢ 100+	1	3.3

Source: Field survey, 2012

Socio- economic variables

As depicted in Table 18, almost two- thirds (67%) had no education. Ninety percent (90%) were farmers and (67%) had partners with no formal education. Farmers were the majority of (90%) among partners of participants. A greater member of participants (97%) earned below GH ¢50 as average monthly income.

Place of last delivery

From the thirty participants interviewed, it was found that more than three-quarters (87%) had their last delivery at home with a few (13%) in health facility.

Reasons for having place of last delivery at health facility or at home

Participants gave several reasons why they chose to have their last births at home or in a health facility. Home delivery was a common place of birth among the participants. Absence of health facilities in communities, distance from residence to health facility, financial constraint, convenient and nearness to family members were the most cited reasons for home delivery. However, perceived disadvantages of having a baby delivered at a health facility were due to high cost which involves paying for delivery services, transport to health facility and food. Some women noted that with home delivery, family members will not be allowed to visit them at the health facility while others, however, indicated that with home delivery the presence of close relatives such as mother, husband, and mothers-in-law provided psychological support as well as physical care such as background

messages and gentle touch. Others also pointed out that giving birth at home costs less but with respect to delivery at the health facility it is expensive.

As explained by a 37 year old woman, *"I gave birth to my last child at home because there is no nearby health facility. To access one, you need to walk 4 km to Nyoli or poyentenga. So when you are in labour pain, you only have to be praying to God to see you through."*

As mentioned by a 32 year old woman, *"I delivered my last child at home because there is no health facility in this community and the distance involve walking to Nyoli is not small. So I am delivered of my baby at home at home."*

Another 35 year old woman explained, *"I delivered my last child at home since labour pain started with me on the farm. Fortunate for me I was in the company of my mother in-law she supported me home and I later gave birth shortly."*

In the narrations given by the three women one thing can be noticed. The absence of health facility in their communities coupled with the distance involved in travelling to access a health facility led to the giving birth to their babies in their homes.

Decision regarding place of last delivery

From the responses of participants, decisions regarding their place of delivery were taken by nobody, but almost all participants were of the view that tradition demands that decisions should be taken by their partner/husband. Others, however, said there are instances where mothers-in-law decided where they delivered their babies, but in any of these instances, it often seemed that the woman had the least say in the matter.

As one 41 year old woman put it, *"My husband and his mother decide where I give birth. However, it is up to me to decide where to be delivered of my babies."*

From a 37 year old woman, *"To me I feel that delivery should not demand any decision making since the onset of labour is usually sudden."*

"My last birth labour started at the time I was about to start preparing supper. Luckily, for me the elderly women in the compound were present, they supported me, in my labour."

For a 37 year old woman her response was, *"My husband decides where I deliver because I do not earn any income, since he controls the food stuffs and animals that we rear, I do not have money to pay for my clinic bills if I should deliver at that place."*

Delivery assistance

The majority of women ended up delivering at home with no assistance from family members.

As described by a 39 year old woman, *"I gave birth to my last child in the house without anybody present since the day was Wechiau market and all the women in the compound had left for the market."*

A narration from a 33 year old woman: *"I deliver my last child at home without anybody's help. The woman in the community who support women to deliver (TBA) arrived when I had finished giving birth."*

Yet another 39 year old woman said: *"I deliver my last child without anybody support since my labour was usually sudden and soon the baby comes out. It was normally too sudden for me to be carried to the clinic."*

Beliefs associated with child birth at home or health facility.

Twenty-four participants said women not resident in urban areas are usually afraid of exposing their privacy to people they are not familiar with and will prefer to give birth at home. Participants also said more support was given them during home delivery than it was at health facility. They claimed labour pain is severe when left alone in labour room in the case of a health facility delivery. Some were quick to add that they were afraid of health facility procedures commonly performed such as cutting and suturing after delivery.

These quotes support the above claims:

A 24 year old woman described her dislike for common medical procedure thus, *"I do not want to give birth in a health facility because I am afraid that the nurses will cut me and I will not be able to sit over hot bath to get heal on time."*

But from a 36 year old woman, her belief with health facility was thus: "*The medical procedure about the health facility is the vaginal examination done at the health facility in my earlier birth at home there was no vaginal examination."*

As explained by a 28 year old woman, *"Giving birth at health facility does not allow woman to have her traditional bathing practices considered vital for her to recover properly from childbirth."*

Birth experiences with persons who assisted in labour.

From participants who had home delivery, persons who supported them through labour were friendly. However those of them who had ever given birth in a health facility lamented of the bitter experiences they received from health staff. These experiences include rough, hostile and harsh attitudes from nurses in addition to insults and yelling at them especially when they arrived late at the health facility. The following are some narrations from women to support their claim:

From a 28 year old woman: *"I had friendly and kind experience from the elderly woman who assisted me during my last delivery this experience encourages me and I wish to always have home delivery."*

According to a 36 year old woman:*"Health staff show so much respect and concern for women who dress well, but for the oppressed and the poor like me here, they are hostile and harsh. This made me not to give birth to my last child in a health facility."*

Narration from a 34 year old woman: *"I did not have any experience in my last delivery from anybody since I deliver by myself without anybody present."*

Recommendations for place of delivery

The majority recommended health facility delivery in spite that study results revealed greater proportion of women had last birth at home. Recommendation

was based on safety and possibility of complications management at health facilities.

These are some women recommendations brought up:

Recommendation from a 39 year old woman: *"I think health facility birth is the best since there are trained and qualified people who can see to your welfare better, unlike the home."*

Another 34 year old woman said: "*I know delivery at home is not the best since in situation where the baby is moving out with cross position could be very dangerous to both the mother and the baby. But should this incident occur during birth in a health facility, doctors and nurses will simply send one into the operation room to remove the baby to save the mother's live."*

Discussion of the study results

The study used both quantitative and qualitative methods and this was to facilitate a better understanding of factors that influence women's place of last delivery in the Wa-West district of Upper West Region.

Descriptive results

From responses on delivery characteristics, most women (95%) prefer to give birth in a health facility. Similarly, almost the same percentages (94%) of women prefer a health facility to the home in their next child delivery. Quite noticeable, however, is the striking gap between preference for women who had in their choice of place of delivery and where they had their last child birth. Women who preferred to have their babies delivered in a health facility were (95%) while those who actually had their last babies delivered in a health facility (58%).

Brifo/Lobi ethnic group, and had to use 1-2 hours to health facility she had lower probability to have her place of last delivery to be a health facility.

Socio-demographic variables

Results indicate that women of the traditional faith have a lower chance to have had their place of last delivery to be at a health facility compared to other counterpart belonging to the Christian faith. The finding is consistent with study

results of Sabine and Oona (2009) where women of traditional faith had lower chance of giving birth in a health facility. The difference in health facility births might be due to difference in socio-cultural characteristics of study participants. Explanation to findings could be influences of religious faith on utilisation health facility. On the other hand, women of traditional faith may belong to traditional cohort and thus not attracted to modern health facility compared to their colleague of Christian faith. Also, traditional remedies administered on woman of traditional faith at child birth could decrease their chance to choose health facility as her place of childbirth. According to Andersen's (1995), concept of behavioral health model can have a great effect on utilization of a health facility. He explained that people must consider problems and understand health threatening situations and to make decision on behaviour change. This applies to women of traditional faith.

If a woman belonged to the Brifo/Lobi ethnic group, she had higher probability to choose her childbirth in a health facility compared to woman who belonged to Dagaabas/Wale ethnic group. This result is inconsistent with Sabine and Oona's (2009) study findings. There were differences in giving birth in health facility among various ethnic groups in Ghana.

Again, a woman who had three and four children had lower chance to have had place of last birth to be in a health facility as compared to a colleague that had one and two children. This study result is comparable to Alemayehu, Fekadu and Solomon (2012) where it found women with low birth order had higher probability to give birth in health facility. This could be explained by the fact that women gain experience in for each successive baby they give birth and

may erroneous to tend to think that they have so much experience to deliver baby at home.

Socio-economic variables

A woman who had secondary education or more had higher probability of having her place of last delivery to be in a health facility compared to a woman with no formal education. Other study results are comparable with this result. From Hyam and Asmaa (2006) study on Syrian women it was found that woman education was significant to her place of child birth. Also from study results of Iddri and Shehu (2006), a literate woman prefers giving birth in health facility compared to a colleague illiterate. It is expected that a woman who is educated has awareness and is more knowledgeable about benefits of giving birth in a health facility. An educated woman stands a better chance to seek modern health care services than her colleague who is uneducated. Formal education has a higher probability of improving a woman's general status as well build up her confidence with regards to decisions about her health and health of members of her household. A woman who is educated is capable of accessing information easily through reading and through the media on issues of maternal health care. This could equip her knowledge with regards to maternal health care and pregnancy complications.

A woman whose partner is a trader had a lower chance of having her place of last delivery to be in a health facility compared to her colleague whose partner was a farmer. This finding is comparable to the results of Idri and Shedu (2006). It is expected that a woman whose partner is in high status occupation should stand a

better chance of encouraging his wife to utilize health facility delivery. It is also expected that her partner in high occupation is associated with wealth and so will pay for household member's medical bills. The well-known correlation between education and occupation could also explain this.

Women autonomy in household

If a woman did not seek her partner's approval to give birth in a health facility, she had a lower chance of having place of last delivery in a health facility compared to her colleague who had to seek her partner approval. The result is similar to study finding of Steinhardt (2008) in Afghanistain where a woman needs to seek her partner's approval to visit a health care service. The following extracts are some women's responses to who decides where they delivered:

As one 41 year old woman puts it, *"My husband and her mother decide where I am delivered of my baby, however it is up to me to decide to deliver where they want."*

A 37 year old woman her response was, *"My husband decides where I give birth because I do not earn any income, since he controls the food and animals that we rear, I do not have money to pay for my clinic bills if I should give birth at that place."*

This practice is common in societies were a woman's education is not promoted. Also, household decisions are solely taken by males. In any case, a male partner should not be seen and considered as the most prominent person from whom approval to visit a health facility could be obtained. For instance, in the absence of a partner and the need to visit health facility arises what would be

the faith of the spouse. This issue of males being the main decision maker in household should be discouraged by all persons since it does not promote health seeking behaviour.

Results indicate that there is a higher probability that women's partner's prefer they had their place of last delivery to be home as compared to a health facility. No study had been found to support or refute this claim. The results shows that some respondents' partners were with no formal education and mainly peasant farmers, which suggest they may neither read nor follow media programmes in the English language on maternal health needs and labour complications. They therefore will not have the knowledge of the benefits of maternal health care presented them in such medium order to see the need to support and encourage their spouse to utilise childbirth in a health facility.

Distance from residence to nearest health facility

If a woman had to travel 1-2 km and over 5 km, she has low probability of deciding place of last delivery to be in a health facility compared to her counterpart who had to travel less than 1 km. The results confirm findings of Alemayehu, Fekadu and Solomon (2012) where long distance travelled to visit health facilities had negative influence on woman refusing to give birth in a health facility.

Below are some quotes in support of the above:

As explained by a 37 year old woman, *"I gave birth to my last child at home because there was no any nearby health facility. To access one, you need to*

walk 4 km to Nyoli or Poyentenga. So when you are in labour pain, you only have to be praying to God to see you through."

As mentioned by a 32 year old woman, *"I deliver my last child at home because there is no health facility in this community and the distance involved in walking to Nyoli is not a small thing. So I deliver my baby at home."*

The issue of distance being an impediment to utilisation of health care facilities can be addressed if a CHPS compound is established in every community. Community base Health Planning Service (CHPS) is a strategy adopted in 1999 by the Government of Ghana and Ministry of Health/Ghana Health Service to extend access to basic health service for its citizens. The CHPS strategy grew out of the piloting of community based services supported through Navrongo Health Research Centre in the Upper East Region. CHPS is a partnership between the health district and communities which led to the placement of trained primary health worker in a community to service as a community health office. The community health officer serves several surrounding communities from a base in one. The community health officer receives support from district and sub district health personnel to perform their duties at the CHPS compound.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The chapter presents summary of the findings, conclusion and recommendations.

Summary

Dependent variable investigated was last place of delivery, with categories as health facility and home. It was from these variables that descriptive and logistic regressions were generated using SPSS version 17.

From the results, more than fifty percent of the respondents were 35-39 years old. Majorities belonged to the Christian faith, and were Dagaabas and married. Women with four and five children parity were common. It was noticed in the results that uneducated women and their partners were in the majority. Farming was the most common occupation. More than three-quarters of the women earned below GH¢ 50 per month and majority lived less than 1 km away from a health facility. This might be as a result of the introduction of the Community based Health Planning System (CHPS) which aims to provide health service care at the door steps of clients. From the results, mothers-in-law are most influential in deciding where women delivered. A woman's discomfort in a health facility

delivery was the distance she had to travel from her residence to the health facility in order to access service and the discomfort with her nakedness seen by nurses. Majority of women said health facilities are the best place to give birth since they are safe and clean and no they eliminate panic of prolonged labour. Women's dissatisfaction with health care service was that it is expensive. Most women claimed they were part of a household decision making and discussed with their partners where to give birth.

Women who belonged to Brifo/Lobi (OR = 5.62) and other ethnic groups such as Gonja, Sissala (OR = 3.51) had higher probability to have had place of last delivery in a health facility compared to their colleagues of Daggaare/ Waale ethnic group. Women who had secondary+ education (OR = 7.44) had a higher chance place of last delivery to in a health facility compared to their colleagues with no formal education. Women whose partners had secondary education and more (OR = 2.49) had higher probability to have had place of last delivery to be in a health facility compared to women whose partners had no formal education. From the results if a woman was a trader (OR = 2.17) she had higher chance of place of last delivery to be in a health facility compared to her colleague farmer. If woman's partner was a trader (OR = 2.66), she had higher probability of having place of last delivery to be in a health facility compared to her colleague whose partner was a farmer. A partner who preferred the spouse had home delivery (OR = 3.25) had higher probability of letting spouse have her place of last delivery to be at home as compared to a partner who preferred spouse had health facility delivery.

A woman who did not seek her partner's approval to give birth at a health facility (OR = 0.27) had a lower chance to have had place of last delivery to be in a health facility as compared to counterparts who sought their partners' approval. If a woman was a trader (OR = 1.88), she had a higher probability to have had place of last delivery to be in a health facility compared to her counterpart who was a farmer.

Conclusion

The utilisation of health facilities as a place of delivery is a matter of concern for public health policy makers and programme managers. Findings have provided better understanding of the factors that influence women's place of delivery in the Wa-West District. Several socio-demographic, socio-economic, autonomy and accessibility/physical distance variables were found to be less likely to influence women's place of delivery. Age, ethnicity, marital status, parity, women educational level, partner education, women occupation, partner occupation, average monthly income, women that discuss with partner where to deliver, distance from residence to the nearest health facility, main means of transport to health facility, time it takes to reach the nearest health facility all tend out to be statistically significant with p-value less than 0.005.

There could also be health programme meant to educate women together with their partners of the need to utilise health facility during delivery. Also, women's should be encouraged to pursue higher education in order to empower them socially and economically to enable them take charge of their own health.

Information dissemination concerning maternal health care is likely to increase teenage mothers' awareness in particular, and the community as a whole, of the benefits of using modern health care and trained skilled professionals for delivery.

Distance is a major reason why many women chose to give birth at home. This issue could be addressed by establishing health facilities in every community so that women will not need to walk long distances to access health care. There should be outreach services with trained staff to provide Antenatal Care [ANC] and maternal health service for women in distant communities. When home delivery is necessary, it should be supported by skilled birth attendants in a safe and clean environment. Another constrain to accessing health care service was due to the cost of these services. This issue can be addressed by ensuring that all women register with the National Health Insurance Scheme or renew their expired cards.

Recommendations

To promote the utilisation of health facility and skilled attendants' delivery among women in the Wa-West district, there is the need for managers of health services of the district to collaborate with Ghana private road trade union to assist Ministry of health to provide regular and reliable transport in rural communities to ensure the safe delivery in the district.

Health managers of the district should institute a scheme to honour drivers who convey more pregnant women to clinics every year deliver and incentive packages for women who make it to a health facility to deliver.

The district assembly in collaboration with the district health service can make provision for a twenty-four hour ambulance service to convey pregnant women to a health facility during labour. Furthermore, Government should aim at closing the gap between urban and rural communities in health service delivery and this can be achieved by setting up more Community based Health Planning Service (CHPS) in rural and remote areas. Hence, other studies can be conducted including many other factors other than what has been considered in this study such as the effect of household wealth status on maternal health care and women last place of delivery.

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APPENDIX I
UNIVERSITY OF CAPE COAST
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF POPULATION AND HEALTH
THESIS TOPIC: ASSESSMENT OF FACTORS INFLUENCING WOMEN CHOICE OF PLACE OF DELIVERY

A case study in Wa-West District in Upper West Region.

Introduction and Consent:

Hello My name is ……..and I am undertaking a study as part of my thesis to be presented in partial fulfillment for the award of M.Phil. in Population and Health at the University of Cape Coast. As part of the study I will like to ask you some few questions concerning your choice of place of delivery.

All responses you shall give to my questions will be treated highly confidential and your identity will not be known.

Participation is voluntary, however I hope you will be willing to be part of the study since your views will be very important to the study and will help in advocating for improvement in child birth in the District.

The interview will not be long it will take about thirty to forty-five minutes. At this juncture may I proceed with the interview?

Yes = 1 [ ]

No = 2 [ ] End interview and move to next respondent

Thank you,

Nov. 2012

PERSONAL INFORMATION

Name of Locality……..

Date of Interview…….....

Questionnaire Serial Number……

Questionnaire Status……..

Start Time…….

End Time……

PART A: RESPONDENT SOCIO DEMOGRAPHIC CHARACTERISTICS

1. Age; How old are you? (Completed years) [ ]
2. Which religious group do you belong?
   (a) Christianity [ ]
   (b) Islam [ ]
   (c) Traditional [ ]
   (d) None [ ]
   (e) Do not know [ ]
   (f) Other specify……
3. Which ethnicity group do you belong?
   (a) Wale [ ]
   (b) Dagaare [ ]
   (c) Sissala [ ]
   (d) Brifo/Lobi [ ]
   (e) Don't know [ ]
   (f) Other Specify……..
4. What is your highest level of education?
   (a) No education [ ]
   (b) Primary [ ]
   (c) Middle/JHS [ ]
   (d) S H S/Technical/Voc [ ]
   (e) Post-secondary [ ]
   (f) Tertiary [ ]
   (g) Don't know [ ]
   (h) Other specify……
5. What is your primary occupation?
   (a) Farming [ ]
   (b) Trading [ ]
   (c) Artisan [ ]
   (d) Seamstress [ ]
   (e) Public servant [ ]
   (f) Don't know [ ]
   (g) Other specify……
6. What is your present marital status?
   (a) Never married [ ]
   (b) Married [ ]

(c) Separated [ ]

(d) Divorced [ ]

(e) Widowed [ ]

7. What is the highest educational level of your husband/partner?

(a) No education [ ]

(b) Primary [ ]

(c) Middle/JHS [ ]

(d) S H S/Technical/Voc. [ ]

(e) Post-secondary [ ]

(f) Tertiary [ ]

(g) Don't know [ ]

(h) Other specify……

8. What is the main occupation of your husband/ partner?

(a) Farming [ ]

(b) Trading [ ]

(c) Artisan [ ]

(d) Public servant [ ]

(e) Don't know [ ]

(f) Other specify……

PART B: WOMEN CHOICE OF DELIVERY

9. Where is your choice of place of delivery?

(a) Health facility [ ]

(b) Home [ ]

10. Where did your last delivery occur?

(a) Health facility [ ] Skip to Q.16

(b) Home [ ]

11. Was any medication received during and after delivery at home?

(a) Yes [ ]

(b) No [ ] Skip to Q.14

(c) Never delivered at home [ ]Skip to Q.16

12. What type of medication was it?

(a) Herbal Medication [ ]

(b) Orthodox Medication [ ]

13. What were the reasons for the medication?

(a) Facilitate fast delivery [ ]

(b) To relief pain [ ]

(c) To avoid complications [ ]

(d) Other specify……

14. Who assisted you when you delivered at home?

(a) Nobody [ ]

(b) Mother [ ]

(c) Mother in-law [ ]

(d) Relatives [ ]

(e) Non trained TBA [ ]

(f) Trained TBA [ ]

(g) Neighbour [ ]

(h) Nurse/Mid wife [ ]

(i) Community Health Officer [ ]

(j) Don't know [ ]

(k) Other specify……

15. What are the reasons for your preference for home delivery?

(Multiple responses are allowed)

(a) Have no reason [ ]

(b) Distance to the health facility [ ]

(c) Lack of transport [ ]

(d) Financial constraint [ ]

(e) Unavailability of service [ ]

(f) Trust in TBA [ ]

(g) Wants privacy [ ]

(h) Safer delivery at home [ ]

(i) Culture restricts home delivery [ ]

(j) Other specify……

RESPONSE TO ANY OF THE ABOVE OPTIONS SKIP TO Q.18

16. What are the reasons for your preference for health facility delivery?

(Multiple responses are allowed)

(a) Have no reasons [ ]

(b) Reside close to health facility [ ]

(c) Safer and clear [ ]

(d) Advised to deliver at a facility [ ]

(e) Fear of obstetric complications [ ]

(f) Friendly nature of health personnel's [ ]

(g) Other specify……

17. Who assisted you with delivery at health facility?

(a) Nobody [ ]
(b) Midwife [ ]
(c) Nurse [ ]
(d) Community health nurse [ ]
(e) Medical doctor [ ]
(f) Medical Assistant [ ]
(g) Community health worker [ ]
(h) Don't know [ ]
(i) Other specify……

PART C: SOCIO-CULTURE ASPECT

18. Are there any traditional beliefs associated with child birth in your community?

(a) Yes[ ]
(b) No [ ] Skip to Q.21

19. What are the traditional beliefs that are attached to home delivery?

(a) Real woman deliver at home [ ]
(b) Deliver without delay [ ]
(c) Woman nakedness must not be seen [ ]
(d) Men are lucky if wife deliver at home [ ]
(e) Other Specify……..
……

20. What traditional beliefs are attached to health facility delivery?

(a) Woman is unfaithful []
(b) Prolong delivery when many are aware[]
(c) Woman is considered lazy/ inferior []
(d) Other Specify……

PART D: AUTONOMY

21. Are you part of decision making regarding need for a household member to seek medical attention when sick?

(a) Yes [ ]
(b) No [ ]

22. Do you discuss with your husband/partner where to deliver?

(a) Yes [ ]
(b) No [ ]

23. Do you have to seek your husband's approval before deciding to deliver at a health facility?

(a) Yes [ ]

(b) No [ ]

24. Where does your husband prefer you to have your delivery?

(a) Home [ ]

(b) Health facility [ ]Skip Q.26

25. If you decide to go to a health facility to deliver without your husband's concern, what will be the consequences?

(a) No Consequences [ ]

(b) Beatings from husband [ ]

(c) Insults from husband [ ]

(d) Refusal of food stuff from husband [ ]

(e) Other specify……

26. Do other family members influence your place of delivery?

(a) Yes [ ]

(b) No [ ]

27. If yes in Q.26 who are those?(MULTIPLE RESPONSE ALLOWED)

(a) Mother In-law [ ]

(b) Father In-law [ ]

(c) Both Mother and Father In-law [ ]

(d) Sister In-law [ ]

(e) Brother In-law [ ]

(f) Mother [ ]

(g) Father [ ]

(h) All the Above [ ]

(i) Other Specify…….....

…….

PART E: AVAILABILITY OF INFORMATION

28. Have you ever received any information regarding benefits of delivery in a health facility?

(a) Yes [ ]

(b) No [ ] Skip to Q.31

29. What are these benefits?.....

……

30. From who was information received?

(a) Health personnels [ ]

(b) Friends/Neighbour [ ]

(c) Media [ ]

(d) Other specify……

PART F: BIRTH ORDER/ PARITY

31. How many children have you given birth to? (BOTH ALIVE & DEAD)

(a) 1 [ ]
(b) 2 [ ]
(c) 3 [ ]
(d) 4 [ ]
(e) 5 [ ]
(f) 6 [ ]
(g) 7 [ ]

32. How many of these births are currently alive?

(a) All are alive
(b) 1 [ ]
(c) 2 [ ]
(d) 3 [ ]
(e) 4 [ ]
(f) 5 [ ]
(g) 6 [ ]
(h) 7 [ ]
(i) None [ ]

33. Which of this delivery took place at home?

(a) First birth [ ]
(b) Second birth [ ]
(c) Third birth [ ]
(d) Fourth birth [ ]
(e) Fifth birth [ ]
(f) All births [ ]
(g) None [ ]

34. If you will conceive again where would you like to deliver?

(a) Health facility [ ]
(b) Home [ ]

Give reasons for either of the responses……...

……

PART G: ACCESSIBILITY AND PHYSICAL DISTANCE

35. What is the distance from your residence to the nearest health facility?

(a) Less than 1 kilometer [ ]
(b) 1 – 2 kilometers[ ]
(c) 3 – 4 kilometers [ ]
(d) Over 5 kilometers [ ]

36. What is the main means of transport to the health facility?

(a) On foot [ ]
(b) Bicycle []
(c) Motorbike [ ]
(d) Vehicle [ ]
(e) Other specify……

37. How long does it take to reach the nearest health facility?
(a) Less than 1 hour [ ]
(b) 1 – 2 hours [ ]
(c) 3 – 4 hours [ ]
(d) Over 5 hours [ ]

PART H: HEALTH FACILITIES/ HEALTH SERVICE FACTORS

38. Is there any health facility which provides delivery service in your community?
(a) Yes [ ]
(b) No [ ] Skip to Q.42

39. What is the type of health facility?
(a) Hospital [ ]
(b) Clinic [ ]
(c) Health post [ ]
(d) CHPS compound[ ]
(e) Don't know [ ]
(f) Other specify……

40. Are you satisfied with patient care services at the facility?
(a) Yes [ ] Skip to Q. 42
(b) No [ ]

41. What are your reasons for service delivery dissatisfaction?
(a) Much time wasted at the facility [ ]
(b) Expensive to seek health service [ ]
(c) Unpleasant treatment from health workers [ ]
(d) Other specify……

42. What are the conditions that mainly influence your choice of the health facility?
(a) Availability of qualified health staffs [ ]
(b) Closeness of health facility to residence [ ]
(c) It is the only facility around [ ]
(d) Other specify……

43. In your view is there any difference between delivery at home and at a health facility?
(a) Yes [ ]

(b) No [ ]Skip to Q.45

44. What are some of the differences?

……

45. Which place of delivery do you consider as best?

(a) Home [ ]

(b) Health facility [ ] Skip to Q.47

46. If home delivery, why?

(a) No cost involved [ ]

(b) No need for transport [ ]

(c) Privacy [ ]

(d) No maltreatment [ ]

(e) Cultural ceremony [ ]

(f) Other specify……

47. If health facility, why?

(a) Clean and hygienic [ ]

(b) Mother and child safety [ ]

(c) No retain placenta [ ]

(d) Fasten delivery [ ]

(e) No bleeding [ ]

(f) Other specify……

48. What is your average monthly income?

(a) Below GH¢ 50 [ ]

(b) GH¢ 50 – GH¢ 99 [ ]

(c) GH¢100 -GH¢ 149 [ ]

(d) GH¢150 and Above [ ]

END OF INTERVIEW

THANK YOU VERY MUCH FOR OPTING TO BE PART OF THIS SURVEY

INTERVIEW GUIDE FOR QUALITATIVE DATA COLLECTION

Recording from in-depth interviews were used to generate transcription.

Mothers who participated in the in-depth interview were within the ages of 19 to 40 years old

1. Socio demographic characteristics (Age residence, education, occupation, income, marital status, religion parity.
2. Where did you give birth to your last child
3. Why choice of place of delivery
4. Who decides where you give birth

5. Who assisted you during labour in your last believing
6. Are there any beliefs attached to women who deliver either at home or health facility in your community? If yes what are those beliefs.
7. What were your experiences with people who assisted you during your last delivery?
8. What will be your recommendation for place of birth to other women?
9. Why?
10. Tell me about any other experiences you went through during your last birth?

APPENDIX II

Sub district with sampled communities by age group for females 15- 49 years

GURUNGU SUB -DISTRICT

Sampled communities	**Age Group**							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
Saru	23	14	10	8	9	9	7	81
Nakariyiri	9	6	4	3	3	4	3	31
Tanziri	9	6	4	3	4	4	3	32
Chogsia	116	72	49	41	45	46	37	404
Total	**158**	**97**	**66**	**55**	**61**	**63**	**50**	**549**

Source; Project from 2000 PHC

LASSIA TUOLU SUB- DISTRICT

Sampled communities	**Age**		**Group**					
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
Kandew	57	35	24	20	22	23	18	197
Wollodeng	20	12	8	7	8	8	6	69
Bakuroteng	31	19	13	11	12	12	10	109
Varimpere	50	31	21	18	19	20	16	174
Olladeng	12	8	5	4	5	5	4	43
Total	**170**	**105**	**71**	**60**	**66**	**68**	**54**	**592**

Source: Projected from 2000 PHC

POYENTENGA SUB-DISTRICT

Sampled communities	**Age**		**Group**					
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
Gadi	29	18	12	10	11	12	9	102
Tambile	16	10	7	6	6	5	55	31
Domangile	102	62	43	35	29	40	32	353
Tendoma	61	10	7	6	6	6	5	56
Total	**147**	**90**	**62**	**51**	**57**	**59**	**46**	**511**

Source: Projected from 2000 PHC

WECHIAU SUB-DISTRICT

Sampled communities	**Age**		**Group**					

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
Tokali	68	42	29	24	36	27	21	237
Dalanyiri	7	4	3	2	3	3	2	24
Kantu	55	35	23	19	21	22	17	190
Mwaakpa	10	6	4	4	4	4	3	35
Tanvaari	7	4	3	3	3	3	2	25
Total	**158**	**97**	**66**	**55**	**61**	**63**	**50**	**549**

Projected from 2000 PHC

DORIMON SUB-DISTRICT

Sampled communities	**Age**		**Group**					
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
Guse	7	4	3	3	3	3	2	25
Dantanga	7	4	3	2	3	3	2	24
Dabozie	11	7	5	4	4	4	3	38
Paala	8	5	3	3	3	3	2	27
Nadizie	10	6	4	4	4	4	3	36
Yizie	15	9	6	5	6	6	5	52
Maabe	25	15	10	9	10	10	8	86
Tamara	11	7	5	4	4	4	3	38
Total	**94**	**58**	**39**	**33**	**36**	**37**	**30**	**327**

Source: Projected from 2000 PHC

EGGU SUB-DISTRICT

Sampled communities	**Age**		**Group**					
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
Zang	34	21	14	12	13	14	11	120
Sukpere	24	15	10	8	9	9	7	82
Dabozie	11	7	5	4	4	4	3	38
Total	**69**	**43**	**29**	**24**	**27**	**28**	**22**	**240**

Source: Projected from 2000 PHC

Sub. District Communities sampled

Sub. District	**No of sampled communities**
Curungu	$4\ \left(28/219 x 30\right)$
Lassie Tuolu	$5\ \left(34/219 x 30\right)$
Poyentenga	$5\ \left(37/219 x 30\right)$
Wechiau	$5\ \left(40/219 x 30\right)$
Dorimon	$8\ \left(55/219 x 30\right)$
Eggu	$3\ \left(24/219 x 30\right)$
Total	**30**

Sub. District	Pop. Of Sub. District	Sample size
Gurungu	549	70 $\left(549/2997\ x384\right)$
Lassie Wolu	592	76 $\left(592/2997\ x384\right)$
Poyentenga	778	100 $\left(778/2997\ x384\right)$
Wechiau	511	65 ($\left(511/2997\ x384\right)$
Dorimon	327	42 $\left(327/2997\ x384\right)$
Eggu	240	31 $\left(240/2997\ x384\right)$
Total	**2997**	**384**

Source: Projected from 2000PHC

Sub. District communities sampled by sampled size

GURUNGU SUB- DISTRICT

Sampled Community	Sampled size
Saru	10 $\left(81/549 x70\right)$
Nkariyiri	4 $\left(31/549 x70\right)$
Tanziiri	4 $\left(32/549 x70\right)$
Chogsia	52 $\left(404/549 x70\right)$
Total	**70**

LASSIA TUOLU SUB-DISTRICT

Sampled Community	Sampled size
Kandew	25 $\left(197/592 x76\right)$
Wolloteng	9 $\left(69/592 x76\right)$
Bakuroteng	76 $\left(109/592 x76\right)$
Varimpere	22 $\left(174/592 x76\right)$
Ollateng	6 $\left(43/592 x76\right)$
Total	**76**

POYENTANGA SUB-DISTRICT

Sampled Community	Sampled size
Gadi	13 $\left(102/778 x100\right)$
Tambile	8 $\left(55/778 x100\right)$
Domangile	45 $\left(353/778 x100\right)$
Tendoma	27 $\left(212/778 x100\right)$
Joda	7 $\left(56/778 x100\right)$
Total	**100**

WECHIAU SUB. DISTRICT

Sampled Communities	Sampled size
Tokali	$30\ \left(237/511 x 64\right)$
Dalanyiri	$3\ \left(24/511 x 64\right)$
Kantu	$24\left(190/11 x 64\right)$
Mwaakpa	$4\ \left(35/511 x 64\right)$
Tanvaari	$3\ \left(25/511 x 64\right)$
Total	**64**

DORIMON SUB. DISTRICT

Sampled Communities	Sampled size
Guse	$3\ \left(25/327 x 42\right)$
Dantanga	$3\ \left(24/327 x 42\right)$
Dabozie	$5\left(38/327 x 42\right)$
Paala	$3\ \left(27/327 x 42\right)$
Nadizie	$5\left(36/327 x 42\right)$
Yizie	$7\ \left(52/327 x 42\right)$
Maaze	$11\ \left(86/327 x 42\right)$
Tamara	$5\ \left(38/327 x 42\right)$

Total	**42**

EGGU SUB. DISTRICT

Sampled Communities	**Sampled size**
Zang	16 $\left(120/240 x 31\right)$
Sukpere	11 $\left(82/240 x 31\right)$
Dabozie	5 $\left(38/240 x 31\right)$
Total	**32**

SUB. DISTRICT SAMPLED COMMUNITIES WITH SAMPLE SIZE

Sizes	**Sample size**
Gurungu Sub-District Communities Sampled	
Saru	10
Nakariyir	4
Tanziiri	4
Chogsia	52
Total	**70**
Lassie Tuolu sub District communities sampled	
Kandew	25
Wolloteng	9
Bakuroteng	14
Varimpere	22
Ollateng	6
Total	**76**
Poyenteng Sub District Communities Sampled	
Gadi	13
Tambile	8
Domangile	45
Tendoma	27
Joda	7
Total	**100**
Wechiau Sub District Communities to Sample	
Tokali	30
Dalanyiri	3
Kantu	24
Mwaakpaa	4
Tanvaari	3
Total	**64**
Dorimon Sub District Communities Sampled	
Guse	3
Dantanga	3
Dabozie	5
Paala	3
Nadizie	5
Yizie	7
Maase	11
Tamara	5
Total	**42**
Eggu Sub District Communities Sampled	

Zang	16
Sukpere	11
Dabozie	5
Total	**52**