ACCESS AND UTILIZATION OF ANTENATAL CARE SERVICES IN FUNTUA LOCAL GOVERNMENT AREA, KATSINA STATE,NIGERIA.

BY

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A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL, AHMADU BELLO UNIVERSITY, ZARIA, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE, DEPARTMENT OF GEOGRAPHY AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA.

JULY, 2014.

DECLARATION

I declare that this thesis entitled "Access and Utilization of Antenatal Care Service in Funtua Local Government Area, Katsina State" has been written by me in the Department of Geography, Ahmadu Bello University, Zaria, under the supervision of Prof. M. Mamman and Dr. J.G Laah. No part of this thesis has been previously presented for award of another degree or diploma in any university or institution. References to published works were properly acknowledged.

_____ _____

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CERTIFICATION

This thesis title "entitled "Access And Utilization of Antenatal Care Services in Funtua Local Government Area, Katsina State" by Onamade Aderonke meets the regulation governing the award of Masters of Sciences of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work dedicated to my lovely family for seeing me through and for making this project a reality.

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All gratitude to Almighty God, for His mercies and blessings throughout my study, and to be able to live and think amongst mankind. Not the least, the strength and sight to be able to carry out the study. Although scholars use to say "It always seems impossible until it's done" but with Almighty God this has become for me.

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ABSTRACT

This research work examined the access and utilization of antenatal care cervices for women in Funtua Local Government Area of Katsina State. Data from the study was obtained from the administration of a semi-structured questionnaire. Majority of the respondents were Christian married women between the ages of 24-34 which also had their first marriage at the age of 20-24 years. This study also revealed that 86 percent of the respondents have knowledge of antenatal facilities existing in tertiary health care centers. The distance of antenatal facility 29 percent of respondents is less than 2km away from their destination with about 29 percent. The demand for antenatal care from modern health care providers appears, according to our analysis, significantly determined by economic factors such as the household living standard, the costs for the antenatal care and in particular the costs related to the distance to health care facilities. Base on findings it is recommended that pregnant women should be offered information based on the available evidence together with support to enable them to make informed decisions about their care, women with any risk factor should be properly checked and treated in order to bring about a sound delivery; all health care centers should be provided with new facility by the center or by government. All these recommendations can help both the health workers to effectively deliver their duties, and also help the pregnant women to deliver safely.

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CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 INTRODUCTION

Pregnancy is one of the most important periods in the life of a woman, a family and the society as a whole. Special attention is being paid to antenatal care by the services through Health Care System of countries globally. The goals of antenatal care are to prevent health problems to both mother and child (Adamu and Salihu, 2002). UNICEF (2003), extended antenatal care is a significant period for pregnant women in area of interventions, information and the fostering of their health, well-being and survival of their infants. Antenatal care is generally aimed at providing adequate healthcare for both the mother and baby at the end of any pregnancy.

Pregnancy itself is always a risk to the mother and there are so many things that can go wrong. Evidence suggests that maternal mortality occurs happen because of complications during pregnancy and delivery. Thus, it has been suggested that antenatal care could play a role in reducing maternal mortality and that it could ensure that pregnant women delivered with the assistance of skilled attendant (Anna *et al*, 2005 and UNICEF, 2011). The Global Demographic and Health Survey Compiler estimated that 500,000 women die each year from pregnancy related complications (NPC and ICF Macro, 2009). About 55,000 of these deaths occur in Nigeria. Nigeria, with only 2% of the world's population accounts for over 10% of the global maternal deaths. In 2003, the World Health Organization (WHO) and the Federal Ministry of Health of Nigeria reported that 145 women die every day in Nigeria as a result of complications at childbirth. Nigeria was ranked second globally to India in number of

maternal deaths. The ratios of woman dying from child birth are 1: 18 in Nigeria, compared to 1: 61 for all developing countries and 1: 29,800 for Sweden (WHO and FMOH, 2003).

Antenatal care (ANC) offers excellent opportunities for promoting maternal health. This is especially true in developing countries where access to health care is limited. Given the potentials of ANC, it has come under sharp focus in recent years. Increasing attention is being given to maximizing its potentials for providing crucial reproductive health services during pregnancy as part of the continuum of care for women. Antenatal care, according to Kandala (2004), is a variable package of screening (through clinical evaluation and investigations) and treatments for pregnant women with the prime objective of prevention, early detection and treatment of complications in the mother and fetus, and the ultimate goal of optimizing maternal and prenatal health.

Understanding of the role of ANC in maternal health, including the role that ANC can play in reducing maternal mortality, has increased over the years. For example, many elements of ANC, such as routine monitoring of height and weight gain have not been shown to have any impact on reducing the risk of serious complications and maternal deaths. The risk approach, which screens women at higher risk of developing complications, has had limited effectiveness. This is because women who develop life-threatening complications often have no apparent risk factors; and those identified as being at risk tend to have uneventful deliveries (WHO, 2008). Women in low risk categories in developing countries experience higher mortality than high-risk women in Northern Europe. Thus antenatal interventions may offer improvements in health without necessarily any significant impact on reduction of maternal mortality.

This has therefore led to a new shift paradigm in antenatal care programming that envisions antenatal care interventions as improving maternal health, being both an end in itself and necessary for improving the health and survival of infants. It is in this context that the revised Millennium Development Goals (MDGs) framework incorporates antenatal coverage as one of the indicators for monitoring universal access to reproductive health.

Studies in developing countries have shown that the use of health-care services is related to the availability, quality and cost of services, as well as to the social structure, health beliefs and personal characteristics of the users (Navaneetham and Dharmalingam, 2003; Ram, 2007). In order to increase the adaptian of antenatal care services in a community, there, is need to understand the factors that underlie the decision of a pregnant woman to utilize the services. This is especially important in rural areas, where 64% of Nigerians resides (Rutstein, 2005).

Comparing the trend in use of family planning by women in north-western region of Nigeria, the NPC and ICF Macro (2009) revealed that the percentage age of married women who use any method of family planning in North-West of Nigeria in 1990 is 6%, those who used any modern method in 2003 was 4% while those who used any traditional method was 3%. Also, considering the trend of child mortality (number of deaths per 1,000 live births), the infant mortality rate from 1993-1998 in northwestern region of Nigeria was 97, child mortality rate from 1999-2003 increased to 113 while under-five mortality from 2003-2008 was 199.

The 2008 Nigerian Demographic and Health Survey also revealed that the total fertility rate (birth per woman) of Katsina state is 7.2% while the percentage of children aged 12-23 months who received all basic immunization in Katsina is only 1% (NPC and ICF

Macro 2009). From the data presented, it can be inferred that the rate at which antenatal care services is accessed and utilized by women over the years, especially in the north-western region of Nigeria is quite slow. Hence, reducing maternal mortality and disability will depend on identifying and improving those services that are critical to the health of Nigerian women and girls, including antenatal care, emergency obstetric care and adequate postpartum care for mothers and babies, as well as family planning and STI/HIV/AIDS services. These issues are focused upon in this study by using Funtua Local Government Area as the case study.

1.2 STATEMENT OF RESEARCH PROBLEM

Nigeria, has one of the highest maternal mortality rates in the world of 800-1500 per 100,00 births (NPC and ICF Macro, 2009). Hemorrhage and obstructed were been found to be the principal causes. In addition to anemia and infections. Worldwide, over 500,000 women and girls die to complications related to pregnancy and childbirth each year (NPC and ICF Macro, 2009). According to NPC and ICF Macro (2009), over 99 % of those deaths occur in developing countries such as Nigeria. The tragedy is that, most of these deaths can be prevented with cost-effective health services. Reducing maternal mortality and disability will depend on identifying and improving those services.

A study on determinants of the utilization of ante-natal care services in Kumbotso Village northern Nigeria by Kabir (2005), examined the factors affecting proper utilization of antenatal services among women in northern Nigeria, using interviews and FGD methods. The findings revealed that long distance to health care facilities are one of the major catalysts to maternal mortality. Accessible networks are bad, which cause delay in arriving at a health care facility for a checkup or in case of emergency. The modes of transformation were limited and expensive. These situations put mother and child in critical condition. However, the study

did not throw more light on women access and utilization of antennal care services in Funtua L.G.A.

In the same vein, Adamu and Salihu (2002), carried out a community-based survey on barriers to the use of antenatal and obstetric care services in rural Kano, Nigeria revealed that a husband decides the place for antenatal care clinic and often a woman needs her husband's permission to seek medical care. It is often not allowed for the woman to leave the house during the day, meaning that in case of emergency, the mother would either have to disobey and seek help or risk her own life and stay. There is a social change taking place on the area however. In this study also, focus is directed to rural Kano area of Nigeria and not Funtua L.G.A.

A study conducted by Anna *et al* (2005), as a community-based survey on the use of antenatal services and delivery care among women in rural western Kenya. Revealed that the patronage usage of ANC was high, but opportunity to deliver important health care delivery services was not fully utilized. Uses of professionally delivery services were low and almost 1 out of 5 women delivered unassisted. This study however, did not considered the spatio-temporal variation of access and utilization of antenatal care services by the women. According to a survey based on a nationally representative sample, NPC and ICF Macro (2009), revealed that the northern states of Nigeria are less advantaged than the southern region. The north is characterized by both less demand for and access to reproductive services.

The level of women's literacy is exceedingly low in Northern Nigeria. While 90% of women have at least primary education in the southern Nigeria, less than 30% of women in the north east and North West have the same level of education. Demands for children-measured by the number of children desired- and actual fertility were reported to be the

northern Nigeria than southern Nigeria. The high fertility in the northern region is a reflection of lower demand for contraception. It study further reported that 16-22% of women in the north east and north west expressed demand for contraception compared to a demand as high as 50% in the south-south and south west. This research wills however, lay more focus on the trend of utilization and access of antenatal care services in Funtua L.G.A, which is in the North-West region of Nigeria.

Marl and Banji (2005), undertook a study on the utilization of Antenatal Care services in a Nigerian Teaching Hospital. The sample included 300 Nigerian women, consecutive records of the antenatal clinic at Obafemi Awolowo university teaching hospital, Ile-Ife were used. Their findings showed that Nigerian women tended to obtain care late in pregnancy, and for about one thirds, the care was inadequate. The gap in the study is that, little or nothing was discussed in north-west region of Nigeria, where access and utilization of antenatal care service by women is low. The NDHS of 2008 indicated that, the proportion of women who obtained ANC services from a skilled health worker is higher among women residing in urban areas (84%) than women who reside in rural areas (46%). The percentage of women receiving antenatal care from a skilled provider varies substantially among the zones, from 31 % of women in North West to 87 % in south east and south west. This indicates, to a very large extent that, women in the north western region of Nigeria are lagging behind in terms of access and utilization of antenatal care services (NPC and ICF Macro, 2009).

According to research on men's role in emergency obstetric care in Nigeria, Odimegwu (2010), posited that 'women are allowed to make decisions on health care behavior during emergency obstetric conditions in the absence of the male partner". This study however contradicts the real situation in northern Nigeria where male (husband)

dominance over women (wives) is relatively high, especially on issues relating to maternity and child bearing.

Henry, Sally and Dahiru (2004) conducted a research on the use of antenatal services and health care delivery among women in northern Nigeria using a base line survey conducted in the three northern Nigeria states of Katsina, Yobe and Zamfara. The summary of the major findings was that there was increase of maternal mortality from within and without the health care system and a general low antenatal care rate in the study areas. This study did not examine the accessibility of those antenatal centers in the area. Similarly, Adamu and Salisu (2002), carried out a study on the barriers to the use of antenatal and obstetric care services in rural Kano, Nigeria using systematic sampling technique in respondents' selection. The study emphasizes social, cultural and economic factors with no examination of the effects of spatio-temporal variation on accessibility to antenatal centers. Another shocking revelation by the NDHS (2008), revealed that women in urban areas are more than twice likely to deliver in a health facility rural counterparts (60% compared with 25%). Southeast has the highest proportion of institutional deliveries (74%), followed by southwest (70%), while North West has the lowest proportion (8%).

To this end, it can be inferred, without any doubt that, the north-western region of Nigeria (Funtua L.G.A inclusive) is suffering serious setbacks in terms of adequate and efficient accessibility and utilization of antenatal care service by women in the area. In addition the literature examined did not focus the spatial variations in accessing antenatal care services. This study therefore, set out to assess the spatio-temporal variation in accessing and the utilization of ante-natal care services by women in Funtua Local Government Area, Kastina

state. It is against this background that this study attempted to answer the following research questions;

i. What categories of antenatal services exist in Funtua L.G.A?

ii. What are the characteristics of antenatal services in Funtua L.G.A?

iii. What factors influence accessibility and utilization of antenatal services in Funtua L.G.A?

iv. Are the challenges of accessing and utilization of ACS in the study area?

v. What are the spatial variations in the ACS in the study area?

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to examine the spatio-temporal variation in access and utilization of antenatal care services among women in Funtua local government area, Katsina state. This aim was achieved through the following specific objectives; that

i. Identify and characterize the type of antenatal care services available to women in Funtua Local Government Area.

ii. examine the awareness of knowledge and type of ANC facilities

iii. examine the effect of physical and economic distance on utilization of ANC services in the study area

iv. evaluate user's perception of adequacy attitude of ANC personnel

v. evaluate the associated community benefits of ANC.

1.4 SCOPE AND DELIMITATION

This study focused on Funtua Local Government Area of Katsina state. Five wards were sampled and used for data collection; namely,

i Anguwan Dutse

ii Anguwan Ibrahim

iii Anguwan Makera

iv Anguwan Musa and

v Sabon Gari

Data on antenatal services, availability, quality, staff/personnel, knowledge of antenatal services, spatial variation of antenatal services and ways of providing antenatal care services among women in the selected areas collected. The study population included female of reproductive age between the ages of 15-49 years.

The main dependent variable under consideration was the number of live children delivered. Independent variables in the study were ethnicity, religion, household income, household size, occupation, educational and literacy level, marriage type, locality, sex preference and first age at marriage. Furthermore, this study will be confined within five (5) years period, i.e. from 2006 to 2011.

1.5 JUSTIFICATION OF THE STUDY

The study examined the need for effective access and utilization of antenatal services by women as a basic driver for economic growth, wealth, child and maternal mortality reduction. Generally, few studies have been conducted in the study area (Funtua L.G.A), but the fact that none of these studies looked at the significance in access of antenatal care services among women in the area makes it an interesting endeavor. It is hoped that the information generated would not only be useful for formulating manpower development programmes for research institutions, government agencies, policy makers and population programme administrators, but it will also form base towards improving the status of women in Funtua L.G.A; contribute to the attainment of millennium development goals (MDGs) 4

and 5; as well as the achievement of sustainable access and utilization of antenatal care services among women, not only in Funtua L.G.A but the country as a whole. These findings are important to policy-makers and programme implementers in designing appropriate strategies and interventions to improve maternal and child health care services. Finally, this research will be of use to the general public and those who wish to conduct further research on this or related research topic.

CHAPTER TWO

CONCEPTUAL ISSUES AND RELATED LITERATURE REVIEW

2.1 CONCEPTUAL ISSUES

2.1.1 Concept of Antenatal Care Services

Antenatal Care Services refers to the regular medical and nursing care recommended for women during pregnancy. Antenatal care services is a type of preventative care with the goal of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child (Ahmed and Mosely 2002). During check-ups, women will receive medical information over maternal physiological changes in pregnancy, biological changes, and prenatal nutrition including prenatal vitamins. Recommendations on management and healthy lifestyle changes are also made during regular check-ups. The availability of routine prenatal care has played a part in reducing maternal death rates and miscarriages as well as birth defects, low birth weight, and other preventable health problems Acharya and Cleland (2000).

Becker, Peter and Black (2003), posits that Antenatal care services is medical attention given to the expectant mother and her developing baby. It also involves the mother's caring for herself by following her health care provider's advice, practicing good nutrition, getting plenty of rest, exercising sensibly, and avoiding things that could harm her or her baby. Afari *et al* (2005), observed that pregnant girls and women are referred to maternity services or Midwife Obstetric Units (MOUs) in urban areas and satellite or fixed clinics in the rural areas. MOUs are birthing units run by midwives in the community for primary healthcare patients.

It's advisable for expectant mothers to book their first visit to the clinic before 20 weeks or as soon as possible thereafter.

Some concepts that are the main determinants of antenatal care are pertinent to this study which needs to be examined. Several studies concentrate on demography and fertility topics, such as the Demographic and Health Surveys (DHS). Recent DHS-based studies on the use of antenatal care are available for rural Nigeria, Ghana (Addai, 2000), Kenya (Magadi, Madise and Rodrigues, 2000), Peru (Elo, 1992) and Thailand (Raghupathy, 1996). Similar surveys focusing on demography and fertility are used recently in studies on the use of antenatal care in Jamaica (McCaw-Binns *et al*, 1995), Nepal (Acharya and Cleland, 2000), and the Metro Cebu area in the Philippines (Becker *et al.*, 1993). The DHS and similar surveys are rich in detail on demography and fertility, but less detailed in economic factors such as costs for antenatal care and household living standard. A somewhat older study on antenatal care use based on a survey that covered both demographic as economic topics concerns also the Metro Cebu area in the Philippines (Wong *et al.*, 1987). By using more precise information on income level and antenatal care costs, our estimations for the effects of these other factors will be less biased.

2.1.2 Parental education of Women

The level of education of the pregnant woman and her husband often shows a significant positive association with the use of antenatal care. Elo (1992), Raghupathy (1996) and Becker *et al* (1993) report a positive effect of the education of both parents, while Addai (2000), McCaw-Binns *et al* (1995) and Wong *et al*, (1987) report a positive effect of education of the mother on use of antenatal care. Since in these studies, except in Wong *et al.* (1987), the household living standard is only approximated, the positive association with the

level of education may partly reflect an effect of the household living standard on use of antenatal care.

A higher maternal education is mentioned in the literature to promote the use of antenatal care in several ways. For instance, Elo (1992) mentions that more education might lead to more decision-making power for women mother within a household. It might also increase her knowledge of modern health care and its effectiveness and of how to apply it. The level of education of the mother might thus be correlated with several other factors that can be assumed to influence the use of antenatal care. Indeed, both Elo (1992) and Raghupathy (1996) found a bi-variate correlation between antenatal care use and the mother's education level, indicators for household living standard and access to health care facilities. However, after controlling for such factors they still find a significant positive association between the mother's level of education and the use of (modern) antenatal care.

2.1.3 Household income

Most studies mentioned above use approximations for the household living standard, because the survey data do not include full information on household income and/or expenses. These approximate indicators differ by study and can include the occupation of the pregnant women, her husband's education level and his occupation, the ownership of durable goods, and household amenities such as water source and toilet facility. Addai (2000) only includes the occupation of the pregnant woman in his analysis and finds no significant effect. Becker *et al.*(1993) use several indicators but only find a significant association with the husband's education level and the ownership of a radio or television.

They argue that both variables might not only indicate household living standard, but also the access to information and the capacity to use it beneficially. In contrast, Elo (1992)

found positive and significant associations between antenatal care use and several living standard indicators including the husband's education level and his occupation, the use of piped water and ownership of several household durables. Similarly, Raghupathy (1996) reports a positive association with the husband's education level and the ownership of durable goods, while Magadi, Madise and Rodrigues (2000) report a positive association with an index of household amenities and durables.

McCaw-Binnsn *et al* (1995) also reported positive associations between antenatal care use and the occupation of the woman and of the main wage earner in the household, and the level of weekly food expenses. Wong *et al.* (2000) is the only study with full information on household income and wealth, but reports only some small positive effects of household wealth and the income of other household members on modern antenatal care use. Thus, though the household living standard might be expected to promote the use of antenatal care, empirical evidence from surveys is mixed.

2.1.4 Proximity to Quality and Costs of antenatal care

According to the economic model a perceived lower quality and higher costs of antenatal care, including both time and financial costs of treatment and travel, would reduce its use. Indeed, Acharya and Cleland (2000), Magadi, Madise and Rodrigues (2000) and Raghupathy (1996) report a negative effect of distance and/or travel time to antenatal care on its use, while Acharya and Cleland (2000), McCaw-Binns *et al* (1995) and Wong *et al.* (1987) report a positive association with quality of antenatal care. Again, the latter study is most detailed by including treatment costs, waiting time and travel time in the analysis, but its results are somewhat confusing and do not show systematic effects of costs. However,

insurance coverage of antenatal care, which lowers its use costs, is significantly associated with more visits.

2.1.5 Other Personal Features

Religion and ethnicity may influence the attitude of women towards pregnancy and modern health care, and thus have an effect on their use of antenatal care. Addai (2000) reports for Ghana a positive association between being Catholic and the use of antenatal care, and a negative with having a traditional religion, while ethnicity showed no significant effect. However, this study does not include economic variables to explain the use of antenatal care, and religion might well be correlated with living standard and thus pick up the effect of this excluded variable. Raghupathy (1996) reports a negative effect of being Muslim on antenatal care use in Thailand.

Several other personal features are included in the above-mentioned studies, some of which are showing a significant association with antenatal care use. Remarkably, Magadi, Madise and Rodrigues (2000), McCaw-Binns, La Grenade and Ashley (1995) and Raghupathy (1996) report a negative association of a pregnancy being unwanted or mistimed with the use of antenatal care. Apparently, these women were less aware of their pregnancy or tried to ignore it for some time, or were actually in circumstances that were less favorable for a pregnancy and for attending antenatal care.

2.2 LITERATURE REVIEW

2.2.1 The need for Antenatal Care Services in Nigeria.

Pregnancy is a natural process and women with some experience might consider antenatal care less necessary. Accordingly, Elo (1992) and Raghupathy (1996) a higher number of previous pregnancies is associated with less use of antenatal care, while Magadi,

Madise and Rodrigues (2000) and McCaw-Binns, La Grenade and Ashley (1995) negative association between a higher number of previous pregnancies and early attendance to antenatal care. However, the latter also report that complications experienced during earlier pregnancies have a positive association with early attendance to antenatal care, suggesting that earlier problems with pregnancies make women more aware of the need for antenatal care.

The demand for and utilization of maternal health services depends on numerous factors, many beyond a woman's direct control, including the physical accessibility of facilities to her home; direct and indirect costs of obtaining services including not only fees for medication, transportation, feeding and accommodation charges but also the convenience of opening hours and average waiting times, the extent to which staff are competent, providing quality care and demonstrating cultural sensitivity to her needs, and the availability of other needed key health care inputs including essential drugs and food supplements (Lashman, 2006).

In addition to these services, quality factors and access to the facility has been adversely affected by the introduction of cost recovery schemes, including user fees for antenatal and delivery services in most states of the country. The impact of these fees on service utilization is particularly severe among the poor and vulnerable groups, who have resorted to the use of traditional medical practitioners and spiritual healers as alternative providers of health care (El-Sefly, 2001 and Mairiga (2003). Utilization is the way and manner in which people use or utilize a particular thing(s), product(s) or service(s) because of the belief that it is important or serves a very vital functional and significant role in their well being, society at large, and the very survival of the human race. In this study, it means the way and manner in which married women of child bearing age - pregnant women and nursing

mothers patronize Maternal Health Care clinic due to the belief and acceptance of the advantages and importance associated with the use of the facility.

An estimated 500,000 women die each year throughout the world from complications of pregnancy and childbirth. About 55,000 of these deaths occur in Nigeria. Nigeria, with only 2% of the world's population therefore accounts for over 10% of the world's maternal deaths. In 2003, the World Health Organization and the Federal Ministry of Health of Nigeria reported that about 145 women die everyday in Nigeria as a result of causes related to childbirth (WHO, 2005).

In terms of absolute numbers, Nigeria ranks second globally to India in number of maternal deaths. The risk of a woman dying from child birth is 1 in 18 in Nigeria, compared to 1 in 61 for all developing countries, and 1 in 29,800 for Sweden (WHO, 2005).

Jones (2000), posits that maternal mortality in Nigeria is not uniform across the country but varies markedly across geographical zones. This has been attributed to differences in a range of factors such as wealth indices, educational level, cultural practices, and healthcare coverage and utilization. According to WHO (2005), the main causes of maternal mortality in Nigeria are obstetric haemorrhage, accounting for 23% of deaths, post-partum infections accounting for 17%, and the trio of eclampsia, obstructed labour and complications of abortion each accounting for about 11% of deaths. Other indirect causes of maternal deaths include malaria and anaemia in pregnancy.

With a neonatal mortality rate of 48/1000 live births, and over 700 newborn deaths each day Nigeria ranks seventh among the ten African countries where newborns have the highest risk of dying Lavy and qugley's (2002). Neonatal deaths in Nigeria account for a quarter of under-five mortality. Infectious conditions such as septicaemia, pneumonia and

meningitis account for the greatest proportion (42%) of deaths within the first month of life. Delivery- related complications, chiefly asphyxia and birth trauma account for 32%, and pregnancy-related complications such as eclampsia, malaria, anaemia, and malnutrition for the remaining 26% of neonatal deaths Nyonator *et al* (2004).

According to the Multiple Indicator Cluster Survey of 2007, the Infant Mortality Rate in Nigeria is 86 per 1000 live births. As with maternal mortality, this figure varies widely from one geographical zone to another with the highest rates in the Northwest (101 per 1000 live births) and the lowest in the Southwest (68 per 1000 live births). The major medical conditions leading to infant mortality in Nigeria are acute respiratory infections, diarrheal diseases, measles and malaria. Deaths of neonates constitute about a quarter of all infant deaths in Nigeria.

There are several underlying factors that contribute to the high maternal and infant mortality rates in Nigeria. These include lack of antenatal care, a low proportion of women attended to by skilled birth attendants, and delays in the treatment of complications of pregnancy. In the case of post-neonatal mortality, malnutrition is a major factor, underlying about half of all infant deaths. Other indirect factors that affect both maternal and infant mortality rates include maternal educational level, cultural practices, and poverty. There is a strong relationship between infant mortality and socio-economic status. Across Africa, the neonatal mortality rate per 1000 live births is 59 in the lowest income quintile and 23 in the highest income quintile. The Nigeria MICS 2007 data showed a similar relationship. The IMR in the highest income quintile was 54 per 1000 live births while in the lowest income quintile it was 101 per 1000 live births, with a clear trend of decreasing mortality as wealth index increases.

Some progress has been made in reducing maternal mortality since the first Safe Motherhood programmes were launched in the late 1980s. However, with the current rate of reduction, Nigeria is projected to achieve a maternal mortality rate of 540 per 100,000 by 2015. This is more than twice the MDG target of 250 per 100,000 for Nigeria. Magadi *et al* (2009), indicated that the number of mothers in Nigeria who die in the course of pregnancy and childbirth is unacceptably high, as is the number of infants born in Nigeria who do not live to their first birthday. For the majority of these deaths, the medical causes are well understood and there are effective preventive strategies available. Urgent health system and socio-economic interventions should therefore be put in place to reduce maternal and infant mortality in Nigeria Reducing maternal, newborn and child mortality in Nigeria is a complex task. The underlying causes are numerous and many of the potential solutions require interventions which go beyond the jurisdiction of the health sector. A multi-faceted approach is required therefore to effectively address the problem. Numerous interventions can be proposed. However, certain key themes appear to recur and these can be highlighted for further consideration by stakeholders.

2.2.2 Utilization and Effectiveness of Antenatal Care Interventions in Nigeria

Antenatal care (ANC) offers excellent opportunities for promoting maternal health. This is especially true in developing countries where access to health care is limited. Given the potentials of ANC, it has come under sharp focus in recent years. Increasing attention is being given to maximizing its potentials for providing crucial reproductive health services during pregnancy as part of the continuum of care for women. Antenatal care, according to MoH (2001), is a variable package of screening (through clinical evaluation and investigations) and treatments for pregnant women with the prime objective of prevention,

early detection and treatment of complications in the mother and fetus, and the ultimate goal of optimizing maternal and perinatal health.

2.2.3 Challenges of Access and Utilization of Antennal Care Services

Antenatal care (ANC) among pregnant women is one of the important factors in reducing maternal morbidity and mortality. Unfortunately, many women in developing countries do not receive such care. Reports from neighboring countries show that a high utilization rate of the ANC service results in lowering the risk of maternal mortality, National Institute of Public Health, 2010). These are factors associated with the traditions, norms and values of people that affect the way and manner in which they seek medical help on health related problems. Culture incorporates belief-system that underlies the perception and interpretation of diseases and illness in societies. Jibo (2004), studied women in Shekar Maidaki village in Kano state where he found that the two main reasons for non-utilization of maternity care services amongst the women are spousal inhibition and access to experience traditional birth. Some women also under utilize ANC due to ignorance and limited information.

Early marriage is an act of giving young girls below maturity age in marriage. This practice is more common in the northern part of the country where girls are married off before they are physically and psychologically mature to manage motherhood. The age at which childbearing begins influences the number of children a woman bears throughout her reproductive life. Similarly, early childbearing, particularly among teenagers (those under 20 years of age) has negative demographic, socio-economic, and socio-cultural consequences. Teenage mothers are more likely to suffer from severe complications during delivery, which result in higher morbidity and mortality for both themselves and their children (NDHS, 2003).

Socio-demographic factors also play an important role in how sickness and illness are acted upon and the pattern of utilization of health care services. Though some of the factors may be individual others are institutional based. According to Erinosho (1979b) the individual-centered factors deal with the interplay between the personal attributes of users and decision-making on the use of health services during ill health. Most important factors are sex, education, ethnicity, income and occupation to mention but a few.

Many studies have further indicated the role of some socio-demographic factors in the utilization of health services; factors such as maternal age (Adersen et al. 1963; Morris 1967; Reide 2002), ethnicity (Zborowski, 1952), Education (Erinosho 1977d), Gender factors (The Prevention of Maternal Mortality Network 1992; Erinosho 1998) and socio-economic status (Mckinley, 1972). All of these factors influence the patterns of utilization of health services in most human societies.

These are important variables in understanding the level of utilization of health facility in general and maternal health care services in particular among pregnant woman and nursing mothers because the age at which a woman first gets married influences the length of time she is exposed to the risk of pregnancy during her childbearing age (NDHS 2003). Maternal age has been found to be positively associated with awareness and utilization of maternal health care service in many societies. Even though it has been documented that awareness and utilization of maternal health care varies in sub-Saharan Africa and Latin America with age between the young and the old

Royston (1998) argued that educated women may have more understanding of the physiology of reproduction and be less disposed to accept the complications and risk of not attending antenatal clinics, than illiterate or uneducated woman. Education has been described

as a 'medication against fatalism'. In addition to that, educated women may also be less likely to accept dangerous practices aimed at alleviating complications in pregnancy. Amongst the Hausa people of Northern Nigeria, for example *girishi* cuts are a traditional surgical operation to treat obstructed labor by cutting the virgina with an un-sterilized blade. Whilst it is commonly performed on uneducated women, educated women rarely accept the practice (Royson, 1989). Uneducated women are less likely to seek the help of professional health services because they are probably less aware of what is available, and probably find the culture of modern health care facility more alienating and frightening.

The order of birth (in terms of number of children given birth to) has been used as an explanatory variable in many studies and it is generally believed that care during delivery would be higher for the first order births and is expected to decline as order of birth increases (Elo, 1992). Furthermore, if a woman ever had a stillbirth in a previous pregnancy, the use of maternal care services would be higher because of known risk involve in childbirth (Bhatia and Cleland, 1995).

Most literatures indicate that there is positive relationship between distance and utilization of health facility in general. Erinosho (1998:52) in one of his studies on 'the relationship between spatial location and use of health facilities' revealed that patients who reside near health facility are more likely to utilize the facility than those who are residing far away, because of travel time and transportation costs. Stephenson and Matthews (2004) also revealed that distance needed to travel to the nearest health facility in Mumbai, India, among migrants, was cited a serious problem that prevent women from receiving prenatal care and delivering in a medical institution.

Erinosho (1998), Adeyemi (2000), Pearce 1980; 2001) UNFPA (2002 and 2004), Sabitu (2004) and Mekonnen and Mekonnen (2002), all indicated that there are differences in utilization of health care facilities and Maternal Health Care services between urban and rural areas. That is, utilization of health facility is generally influenced by residence (locality). There is high level of utilization of health facility among urban women as compared to their rural counterparts, due to availability of health facilities in the urban areas compared to rural areas, where in most cases the facilities are not available. A base-line study on Household in Borno state by Waziri (2004) revealed among others that 73% of the urban-based facilities provide antenatal care (ANC), and only 27% of rural based facilities provide antenatal (ANC) service. Similarly 65% of the facilities in urban areas provide Post natal care (PNC) and only 23% of the facilities in rural areas provide post natal care services.

According to Erinosho (1998f), in most third world countries, urban women tend to benefit from increased knowledge and access to Maternal Health Care services compared to their rural counterpart, because health facilities are more accessible in urban areas and the various health promotion programs are urban based and disseminated by urban based mass media out lets to the advantage of urban residents.

Pate (2001), also found that residence is closely linked to the availability and utilization of health services in general and maternal health care in particular. That whether one resides in rural or urban areas will have implications for access to and utilization of health facilities. Other barriers mentioned by respondents, though not of interest to the study yet we feel it is important to mention them for future studies. These factors deal mostly with structural and personnel problems associated with health institutions that inhibit patients from patronizing them (health facilities). Some of these factors are; availability of facility, the

standard and quality of facility, public perception of public health system, general cost associated with health facility in terms of transportation, medication, and feeding. Others are low enumeration, lack of good accommodation for doctors and nurse, lack of training opportunities, unwillingness of authority to sponsor training, and delay in promotion. Furthermore, a number of cultural beliefs and values among majority of the people in the state concerning pregnancy and childbearing are still adamant on their tradition. Therefore, the combination of these beliefs and cultural prohibitions could prevent optimal use of obstetric services and care at modern health facilities.

2.2.4 Strategies for Improving Coverage and Effectiveness of ANC in Nigeria

Erlindawati *et al* (2010), noted that problem of poor coverage, inadequate utilization and poor content of ANC are due to the following factors:

i. Inadequate health facilities
ii. Poorly equipped health facilities
iii. Inadequate health personnel
iv. Poor technical skills of health care providers
v. Poverty
vi. Low levels of education among women

Strategies to address these problems and scale up key antenatal interventions will include revitalizing primary health care, staffing of health facilities, building capacity of health care providers, implementation of evidence based interventions and implementing reforms in key sectors such as education, health, and the economy.

Primary health care has the greatest potential of reaching the majority of the population. About 71% of Nigerians have access to a primary health centre (PHC) facility

within a 5 kilometre radius of their home (Erlindawati *et al*, 2010). However, these facilities are poorly equipped and lack essential supplies and qualified staff. Urgent steps are needed to increase access to primary health care and the quality of services received particularly for women in rural areas, and in the North East and North West (Erlindawati *et al*, 2010). It is expected that funding of primary health care will be effectively addressed in the National Health Bill which proposes direct budgetary allocation for primary health care from the federation account.

Large disparities exist in the distribution of health care providers. The majority of health professionals and health facilities are concentrated in urban areas, especially in the south. Innovative measures are required to attract trained health personnel to accept postings in rural areas. Incentives are also needed to retain skilled health care providers in rural areas. It is essential to retrain health care providers periodically in order to build capacity and ensure familiarity with evidence-based health interventions (Nisar, 2003). Strategies to scale up effective interventions in ANC to improve maternal health involve cross-cutting issues. Education and access to wealth are key determinants of utilization of ANC. Therefore concurrent developments are essential in key sectors including health, education and the economy. Policies are required that will facilitate the creation of an environment for improving female education and empowering women financially and morally to take greater control of their health care needs. Engaging communities on the benefits of ensuring access to ANC for pregnant women will have positive effects on improving maternal health.

Kenthongkham (2009), suggested that concerted efforts are needed for adoption and implementation of goaloriented (focused) ANC in all health facilities in Nigeria. The objective of this new model of ANC is the promotion of maternal and newborn health through

evidence-based interventions including counseling and antenatal health education to change attitude, health care seeking behaviour at the individual, family and community level. Special consideration must be given to counseling requirements in this new model which increases average time spent with first visit client to 40 minutes compared with an average of 15 minutes consultation in the traditional model.

i. Poverty is clearly linked with both maternal and infant mortality

Poorer women are more likely to be malnourished or sick during pregnancy, yet they are less likely to access antenatal care and to deliver with a skilled birth attendant McCaw-Binns (2006). As a result their babies are at higher risk of low-birthweight, asphyxia and infections. These babies are also more likely to be malnourished in infancy and to develop life threatening infections. Closely related to poverty is educational status of women. In general, less educated women are more likely to be poor, but even more affluent women with lo educational levels are less likely than more educated women to access skilled healthcare for themselves or their babies.

Addressing poverty and low educational status of women are long term goals. In the short term, the health service needs to develop strategies that target poorer women within their communities.

ii. Skilled care is critical to reducing both maternal and neonatal mortality

The relationship between skilled care at delivery and both maternal and neonatal mortality is striking. Well-trained skilled birth attendants can deliver a combined package of essential obstetric and newborn care which addresses many common complications that occur during and after delivery. Clearly, there are insufficient numbers of nurse/midwives to attend all deliveries. However, the problem is compounded by the fact that so many women have their

babies at home. Mothers will use health services if they perceive them to be of good quality. Encouraging women to have their babies in health facilities will help to maximize the use of the available health manpower while the task of increasing the number of skilled care providers is being addressed McFadden (1998).

iii. Skilled care without required equipment and supplies is not sufficient

It is not possible to predict which woman will develop complications during labour, and the distance to the next health facility with the capacity to provide life-saving emergency obstetric care is often too far in the event of an emergency. Skilled birth attendants therefore require at least a minimum of equipment and supplies tools to enable them perform some basic life-saving procedures. The Basic Emergency Obstetric Care and Comprehensive Emergency Obstetric Care model for specified population densities is still relevant (McFadden, 1998).

iv. Political and financial commitment is essential

Maternal mortality can not be reduced without some degree of financial investment to bring the standard of care to a minimum level. The issue of budgetary allocation to health should be addressed. Strong political commitment is required to sustain the flow of financial resources in the long term.

v. Breastfeeding offers 'quick wins' for infant and child health

Early initiation and sustained exclusive breastfeeding are proven, almost cost-free child survival strategies whose benefits begin in the neonatal period and extend well beyond infancy. Breastfeeding alone can save the lives of thousands of babies. Failure to institutionalize breastfeeding promotion across the health system is a major missed opportunity to reduce infant and young child mortality.

vi. The primary health care system is critical to reducing maternal and infant mortality

The primary healthcare system is still the first point of contact between the majority of women and children and the organized health system, especially in the rural areas. Even in urban areas, the for-profit healthcare sector cannot be relied upon to effectively deliver preventive healthcare interventions. The primary health care centers must be revitalized, staffed, equipped, and made functional. Issues of the skewed urban-rural distribution of health manpower as well as healthcare worker incentives will need to be addressed for this to happen.

vii. Improved coordination of donor programs is imperative

Effendi *et al* (2009), pointed that huge amounts of financial and technical resources are being committed to maternal and child care programmes by donor agencies. Without proper coordination, very little leverage is obtained relative to the amounts invested. Some programmes actually do more harm than good to the health system. The issue of vertical programming in Nigeria is longstanding and innovative ways of addressing it are urgently required.

viii. Routine monitoring and evaluation and focused operational research initiatives are needed for planning

Basic record keeping procedures such as clinic registers, birth and death certification and health management information systems reporting forms yield volumes of useful data. This should be harnessed for evidence-based health planning and research. Data gathered at lower levels should be analysed at lower levels for easily disaggregation and utilization at the point of generation. Overdependence on periodic DHS and MICS surveys for statistics should be overcome as it is minimally helpful for operations at grassroots level (Erci, 2009).

2.2.5 Care during pregnancy

According to a study by Afari *et al,* (2001), it was revealed that only 24.7% had visited a clinic or facility for ANC at least once during their most recent pregnancy, with 4.9 as the mean number of antenatal visits during pregnancy. One or two visits only were made by 33 (7.5%) and 63 (14.3%) of the women, respectively. Among those who could recall when they first attended, 110 women (25.9%) started ANC visits in the first trimester, 272 women (61.7%) started in the second trimester, and 58 women (13.2%) in the third trimester.

In the same study by Adamu and Salihu (2010, a total of 1,347 (75.3%) women never had ANC during their most recent pregnancy. Of those with no ANC, 14.0% sought advice on their health or the health of their unborn child from sources such as traditional birth attendants, family members, friends, or co-wives. In the bivariate analysis, women with two or more children were the least likely to have ANC including women of high socioeconomic status (SES), those residing in rural areas and those residing in Yobe and Zamfara. Women whose recent birth is dead are also least likely to attend ANC. In a multivariate model, only women living in rural areas (adjusted odds ratio [AOR] 3.4, 95% CI 3.0–3.8), those without primary (AOR 0.3, 95% CI 0.3–0.4) and without secondary and higher education (AOR 0.2, 95% CI 0.17–0.24) remained associated with never having ANC. Residence in Yobe (AOR 1.4, 95% CI 1.2–1.6) and Zamfara (AOR 3.0, 95% CI 2.1–4.1) including women whose recent birth died (AOR 1.5, 95% CI 1.3–1.9) are associated with never attending an ANC.

About 67% made some preparations for delivery, including 45.6% who made provisions for clean clothes; 7% prepared for clean instruments for delivery and another 7% made other preparations. Only 0.4% had made any preparations for transport if needed to a health facility. Over half of the women prefer a home delivery because it is comfortable and

not necessary to go elsewhere (Adamu and Salihu, 2001). The major objective of antenatal care, according to NPC and IFC Macro (2009), is to ensure optimal health outcomes for the other and the baby. Antenatal care from a trained provider is important to monitor the pregnancy and reduce morbidity risks for the mother and child during pregnancy and delivery. Antenatal care provided by a skilled health care worker enables: early detection of complications and prompt treatment of diseases through detection and treatment of sexually transmitted infections; prevention of diseases through immunization and micronutrient supplementation; birth preparedness and compilations readiness and health promotion and diseases prevention through health messages and counseling of pregnant women.

It was estimated that, 59,000 maternal deaths occurred in Nigeria in 2005 and the Maternal Mortality Ratio (MMR) was 1,100 deaths per 100,000 live births, giving a lifetime risk of maternal death of 1 in 18 (WHO, 2009). The situation in northern Nigeria is a particular cause of concern where maternal mortality is much higher than the national average. Maternal Mortality Rate (MMR) in 2003 for the North West Zone and North East Zone of Nigeria was estimated at 1,025 and 1,549 deaths per 100,000 live births respectively compared to a national average of 800 deaths per 100,000 live births.

Maternal mortality, according to Bulatoo and Ross (2010), refers to the death of a woman while pregnant or within 42 days after delivery, excluding accidental causes of death. It is very hard to estimate the real figures as only 31% of women deliver in health care facilities (WHO, 2001). Maternal mortality is also a very hard subject to monitor due to poor reporting and lack of proper methods to measure actual death rates. In 2003, it was estimated that approximately 529,000 women died from complications related to pregnancy or delivery (WHO, 2004). The majority of maternal deaths occur in developing countries (WHO, 2004).

Causes of maternal deaths include complications of abortions, obstetric complications such as hemorrhage, dystocia, eclampsia, sepsis and infections such as tuberculosis and HIV-1. Attendance at antenatal Clinics (ANCs) and receipt of professional delivery care have been associated with a reduction in maternal deaths (Vaahtera *et al*, 2004). In the same vein, Bawa, Umar and Unadeko (2004), asserts that, the ANC system in developing countries has been adapted from developing countries without formal evaluations of the impact of interventions in developing countries settings. More recently, studies have been conducted to identify procedures proven to improve reproductive health. These evaluations demonstrated that, in low risk pregnancies (pregnancies with no abnormal obstetric or medical history), a decrease from 12 ANC visits, as had been previously recommended, to a less costly 4 visits schedule did not result in an increase in adverse maternal and perinatal events (Adebayo and Fahrmeir, 2005). As a consequence, the World Health Organization now recommends a 4-visits ANC schedule for low risk pregnancies (WHO, 2010).

The number of antenatal visits, content and acceptance of models of ANC has been evaluated in recent times. A multi-centre randomized trial of a new model of ANC emphasizing goal-oriented actions known to be effective in improving maternal or neonatal outcomes and fewer clinic visits showed that it had no adverse effects on maternal or perinatal outcomes in women with low risk. Synthesis of evidences from seven randomized trials of ANC comparing a model with reduced number of visits with or without goal oriented components and standard antenatal models showed no clinical difference between low frequency of visits with incidences of pre-eclampsia, urinary tract infections, post-partum anaemia, maternal mortality and low birth weights.

Given the strength of this evidence, the WHO has recommended adoption of a new model of ANC and produced a manual to guide its implementation. The model recommends a standard programme of four antenatal visits for the 75% of pregnant women who are at low risk of complications. In this model, otherwise described as focused antenatal care, only examinations and tests that serve an immediate purpose and that has been proven to be beneficial should be performed. According to the WHO (2008), its major goal is to help women maintain normal pregnancies through:

i. identification of pre-existing health conditions (such as HIV infection, malaria and other medical conditions);

ii. early detection of complications arising during the pregnancy (anaemia, infection, hypertension);

iii. health promotion and disease prevention (through counseling about important health issues including recognition of danger signs, family planning, immunization)

iv. birth preparedness and complication readiness planning (planning for skilled birth attendant at birth, place of birth, mobilizing family and community resources).

To fully benefit from these interventions, it is important that women begin attending ANC early in pregnancy. Kulmala, Vaahtera, and Rannikko (2005), posits that, in many developing countries, the majority of births occur without the help of a skilled assistant (defined as midwife, nurse trained as midwife, or a doctor) at home or in other non-hospital settings. Home deliveries in the absence of skilled professional attendants have been associated with adverse infants and maternal outcome. However, home deliveries without a skilled attendant are chosen to occur for a variety of reasons, including long distance or difficult access to birth facility. In an attempt to improve care during home deliveries and

reduce maternal mortality, Traditional Birth Attendants (TBAs) have been trained in modern delivery care, with varying report of success (Kabir, Iliyasu, Abubakar, and Sani, 2007). Kabir, Iliyasu, Abubakar, and Sani (2007) went further to suggest that, the presence of a professional attendant at each birth can lead to a marked reduction in maternal mortality. Professional health care during childbirth is one of the process indicators to asses progress towards the millennium development goal of improving maternal health.

Ogunlesi, Okeniyi, Owa, and Oyedeji (2010), observed that, the Antenatal Care Policy in Nigeria follows the newest who approach to promote safe pregnancies, recommending at least four ANC visit without complications. This updated approach called Focused Antenatal Care (FANC), emphasizes quality of care during each visit instead of focusing on the number of visits.

Early detection of problems during pregnancy leads to more time treatment and referral in the case of complications. This is particularly important in Nigeria, a large country where physical barriers are a challenge to the health care delivery system. In Nigeria, the provision of ANC is in transition from the traditional approach to the FANC approach. The new schedule of visits is as follows: the first visits should occur by the end of 16 weeks of pregnancy, the second visit should be between 24 and 23 weeks of pregnancy; the third visit is at 32 weeks and the fourth visits takes place at 36 weeks (WHO, 2008). However, women with complications, special needs, or conditions beyond the scope of basic care may require additional visits.

By zone, the highest percentage of women who receive postnatal care within the first two days after delivery is found in the southwest zone (68%). The lowest percentage of women utilizing services is in North West zone, where 17% receive post natal care within two

days of delivery and only 19 % received post natal care in the first 41 days (NPC and ICF Macro, 2008). It is pertinent to note that, Antenatal Care (ANC) attendance provides a unique opportunity to improve the health of women and their infants. According to Adamu and Salihu (2002), utilization of ANC provides opportunities for a full range of health promoting services that may include weight and blood pressure measurement, screening and treatment for syphilis, prevention and presumptive treatment of malaria in pregnancy and health education, among others. In the same vein, NPC and ICF Macro (2008), reported that, ANC is also the opportunity to counsel women about possible serious complications to pregnancy and delivery. At each ANC visit, women can be asked whether they have experienced any of these complications and they can be reminded what to do if any occur (NPC and ICF Macro, 2008). The importance of skilled attendance at delivery has long been recognized, and ANC visits also serve to encourage women to have skilled attendants at birth at a facility.

However, Kandala (2004), noted that distance to health facilities, inadequate transportation, socio-cultural beliefs and the need for immediate and specialized services have hampered women's ability to access these services in many less developed countries and northern Nigeria in particular. Attention to clean and hygienic delivery practices and the provision of essential care for the newborn, such as thermal protection and early and exclusive breast-feeding (WHO 2006), are important for the health of all infants whether born at home or in a health care facility. Community and primary care level interventions aimed at increasing these critical elements of ANC have been found to be highly cost effective (WHO, 2005). In the same vein, the Policy Project (2006), revealed that up to 69% of women still give birth in a traditional setting, either at home or in a church. There are great disparities in numbers when rural and urban areas are compared.

Furthermore, Antenatal care (ANC) services indirectly saves the lives of mothers and babies by promoting and establishing good health before childbirth and the early post-natal period. It often presents the first contact opportunities for a pregnant woman to connect with health services, thus offering an entry point for integrated care, promoting healthy home practices, influencing care-seeking behaviours and linking women with pregnancy complications to a referral system; thus impacting positively on maternal and fetal health (United Nations Development Programme-UNDP, 2006). The very low maternal/infant morbidity and mortality rates reported for developed countries compared with the extremely high figures in developing countries have been attributed to the higher utilization of modern obstetric services by the former (Lawn, 2009). Currently, 71% of women worldwide utilizes ANC services; and in industrialized countries – 95%, South Asia – 54% and Sub-Saharan Africa – 64% (WHO, 2010).

2.2.7 Assistance during delivery

Afari *et al* (2001), revealed in the study that most women (90.7%) delivered at home, their own or someone else's. The most frequent reason for not attending a health facility for delivery was that home deliveries were comfortable (43.8%). Other important barriers were 'not necessary to deliver at health facility' (18.6%), and expense (total and for transport) (17.4%) (Bawa, Umar and Onadeko, 2004). A small subset (3.4%) had no permission from their husband and another 2.1% disliked the attitude of health workers. Seven percent of the women gave other reasons for not delivering at a health facility, such as against local custom. Of note, 93.6% of those who delivered at home were aware of the potential complications and could identify one or more complications that could occur during pregnancy. Fifty three percent of these women knew at least two complications.

In multivariate analysis, factors associated with home delivery included: age ≥ 20 years, parity ≥ 2, rural settlement, lacking any education, residence in Zamfara state and death of recent child. Among all women, only 11.2% were attended to by a professionally trained provider (doctor or nurse/midwife) whereas trained and non-trained TBAs assisted another 14.6% and 45.8% of women respectively. A high proportion of women (21.1%) were attended by an untrained other person.

This survey provides specific guidance for our programme planning. It is clear that our programmes must address the reduction of maternal mortality from within and without the health care system.The low ANC rate found in this survey is consistent with earlier studies conducted in 2000 in rural Kano State of northern Nigeria where 12% of the women were reported to have attended ANC (Adamu and Salihu 2002). What we have learned with our survey is the need to target outreach about the importance of ANC to those most at risk for not being aware of or able to access appropriate care. In these three states, efforts need to be intensified in Yobe and Zamfara states.

We also need to focus on women with no formal education and particularly those who have already had lost a newborn or young infant. Although the perceived expense of the ANC may hinder attendance, it is uncertain that free ANC would increase coverage substantially because transport costs, physical inability to travel long distances, and a perceived negative attitude of health workers and poor quality of care would remain barriers. A substantial proportion of women did not receive services offered by the ANCs such as breastfeeding and newborn counseling, malaria prevention and counseling on complications. Yet the ANC through the health care system remains the primary source of information about pregnancy and newborn care, because only a minority sought advice elsewhere on their health or the

health of their unborn child. Because of the high illiteracy among women interviewed in the survey and generally among women in northern Nigeria, outreach efforts need to use a variety of community engagement strategies, and counseling and educational materials used during ANC also need to be audio-visual, interactive, and pictorial, enabling them to reach the uneducated women most at risk for not attending ANC or learning the details about assessing their own risk for severe complications. The cultural resistance to ANC and to delivery at a health facility also needs to be addressed through a variety of channels, some of which need to include men who give permission and the money to their wives for these visits.

When women do receive ANC, it is generally not before the second trimester. Late ANC attendance does not provide women with a chance of benefiting fully from preventive strategies, such as iron and folic acid supplementation, and intermittent preventive malaria treatment in pregnancy among others. To encourage earlier ANC attendance, service delivery must be improved and communication messages that aim at removing barriers to ANC utilization should be increased.

The proportion of women who gave birth in a health facility is lower than the national estimate of 35.0% for Nigeria, slightly higher by one percentage points than the estimate for the North West zone (8.4%), and lower than the estimate for the North East Zone in which the three states fall (i.e., Katsina and Zamfara fall in North West; Yobe in North East) (National Population Commission [Nigeria] and ICF Macro, 2009). In general, deliveries at health facilities are lower in the study area and Nigeria in particular compared with other West Africa countries such as Senegal (61.8%; 2005 DHS), Mali (45.1%; 2006 DHS) and Cameroon (59.0%; 2004 DHS) (Measure DHS STATcompiler 2009). Key contributing factors for a home delivery included perception that home deliveries are comfortable, cost and

health deliveries not being considered as necessary. As the programme seeks to build basic support for deliveries at community health posts, it is important to also pay attention to communicating about facility based deliveries so that these also are perceived in a positive light and accepted by the community. As indicated by the reasons for not delivering in a health facility, it is also important to work on addressing emergency obstetrical access, both through a community fund for families facing emergencies and with a transport "chain" to evacuate women in labor.

The use of TBAs in the study area is very high and suggests that they are the backbone of maternity services in rural areas, and in our survey they attended about 60.4% of deliveries. While recognizing the importance of facilitating access to health facilities for deliveries, efforts need to be expanded to train a cadre of skilled birth attendants who can work within the villages to assist home based deliveries where the risk of complications is not as high. Such skilled TBAs also can provide advice to pregnant women and assist in assessing complication risk, so that women with potentially dangerous pregnancies are encouraged to go to the health facility for care before they begin the labor and delivery process when this becomes more urgent and more difficult.

Safe motherhood strategies promote counseling of clients on danger signs and the development of an individual birth plan. Pregnant women and their relatives are encouraged to arrange transport, money and a companion before onset of labor. These results indicate that the situation in northern Nigeria needs urgent improvement. The MNCH Programme is working on providing maternal and child health services and saturating them in the three selected states of Katsina, Yobe and Zamfara. This survey can provide baseline data for the target states against which efforts to improve services in the ANCs can be evaluated.

In another study by Ahmed *et al* (2005), only half of the respondents had received any ANC services. These findings are in agreement with another study which reported that, in 2007, the rate of pregnant women who visited the ANC in the Kham District was the lowest compared with that in the Ad District of Huaphanh Province (Becker *et al,* 2001). This study confirmed that the utilization of ANC among women with sufficient knowledge about the benefits of ANC and the complications occurring during pregnancy was higher than among women lacking such knowledge; other studies have supported our findings. Therefore, each respondents knowledge has played a very important role in the utilization of ANC, encouraging pregnant women to seek and accept ANC services. Similarly, previous studies have emphasized the importance of raising awareness among women of reproductive age, especially among the uneducated. Improving knowledge about the benefits of ANC for pregnant women is an important element in enabling them to enrich their experiences as well as supporting their effort to better appreciate ways to protect their health and that of their children. Moreover, once they become knowledgeable about ANC, they will take better care of their own health. Healthy mothers who regularly visit ANC during pregnancy will greatly enhance their family's health. A diminishing rate of maternal and child mortality will also reduce a family's expenses and ensure their children's good health. A good attitude is the most valuable precondition for any healthy behavior. A study by Carroli *et al* (2008) showed that women who had a positive attitude towards ANC had a higher proportion of ANC visits than those with a negative attitude.

This finding was consistent with that of previous studies which reported that a respondent's attitude was a critical factor in encouraging pregnant women to receive ANC services. Many respondents have mentioned that they are embarrassed when visiting an ANC.

With improved knowledge about the benefits of ANC and the importance of a positive attitude toward it, these women will come to understand that ANC's medical procedures and interventions will do much to save their lives and improve their children's health. In this way they will be motivated enough to overcome their reluctance. In many ways, changing attitudes and behavior are the most challenging tasks, but are also the least costly. Proper educational campaigns and the improved dissemination of information are investments for the long-term.

Another finding also revealed that the use of ANC was higher among women with a high income who regarded the cost of services and transportation as no great expense. These findings are similar with those of previous studies indicating that family income and the cost of accessing care did in fact play a very important role in the utilization of ANC services and in encouraging pregnant women to visit ANC (Elo, 2000). However, in order to support and encourage pregnant women to visit the ANC and thus fulfill the Millennium Development Goal on maternal and child health, the government should provide free access to ANC for pregnant women who are poor. Moreover, different districts may have different recommendations depending on the location and modes of accessibility. Such differences should be considered when developing policies.

Pregnant women who lived far from the ANC had the lowest rate of ANC visits. A similar conclusion was reached by other studies showing that long distances caused a reduction in accessibility to ANC services, GSS (2000) Especially in rural areas, a lack of access roads to villages poses a serious problem, indicating that alternative approaches should be developed to better protect women's health. One way to alleviate such problems is the use of mobile clinics to provide services to remote villages, and health professionals should make home-care visits to pregnant women in remote communities. Moreover, VHVs/TBAs should

be better trained since they are key collaborators in community empowerment and the mobilization for health. With adequate training they may be able to provide ANC services and to encourage pregnant women to utilize ANC health facilities.

In conclusion, the results of the study by (Elo, 2000), confirmed that the utilization rate of ANC services is very low in the Kham District. The main factors influencing the utilization of ANC are the respondent's level of education, knowledge, and attitude. In addition, low income, long distance, insufficient or expensive transportation services are major obstacles to ANC access for pregnant women. Based on these findings, it is recommended that health education programs will be undertaken to improve women's awareness of ANC, and that the MOH should provide ANC services such as mobile health care and home care visits for remote villages or those difficult to reach. Moreover, the MOH should give priority to TBAs/VHVs training in order to extend the scope of ANC services and enhance the ability of pregnant women to reach them. At the same time, ANC services should be provided free of charge, especially for pregnant women who are poor.

Considering the total fertility rate of 4.6 births per women GSS and MI, (1996), pregnancies play an important role in the lives of most Ghanaian women, and favorable pregnancy outcomes are thus in their interest, as well as in the interest of the next generation of Ghanaians. It is fortunate that already 85 percent of the women seek antenatal care from modern health care providers such as doctors, medical assistants, nurses or midwives. However, a considerable share does not make the minimal number of four antenatal care visits as recommended by the World Health Organization.

The demand for antenatal care from modern health care providers appears, according to our analysis, significantly determined by economic factors such as the household living

standard, the costs for the antenatal care and in particular the costs related to the distance to health care facilities. To increase the use of sufficient antenatal care in Ghana, improving access to antenatal care in rural area seems the most effective policy instrument that directly affects the choices pregnant women make in this respect. Currently more than a third of the rural women have to travel more than 5 km to the nearest modern provider of antenatal care. Pregnant women in Ghana show a preference for antenatal care by a doctor, but this is the most expensive care alternative. As far as government funds are involved, a general improvement of access of health care in rural area or a specific increase in the number of rural midwifes seem more efficient. For the latter purpose it may be an option to give resident traditional birth attendants additional training in modern antenatal care provision. Accessibility of antenatal care may also be promoted by improving transport and telecommunication facilities at health centers where such care is provided, as experience in rural Uganda shows (Musoke, 2002).

Women's attitude to antenatal care seems to be influenced by their schooling, since more years of education of a pregnant woman is associated with a choice for sufficient antenatal care. Hence, in the longer term a significant effect can be expected from the ongoing increase in education of pregnant women in Ghana. Its education policy to provide all children with at least nine years of basic education might according to our analysis considerably improve future antenatal care use. The positive effect of education also suggests that through information campaigns women in Ghana can be made more aware of the importance of sufficient antenatal care for their health and that of their newborn children. On their first visit pregnant women could be advised to make at least four visits as recommended by WHO. Special attention is warranted for women with more pregnancy experience, who tend to use

insufficient antenatal care. To increase efficiency in antenatal care provision and prevent redundant antenatal care visits, Ghana could update its official guidelines for antenatal care according to the new standards promoted by WHO.

Addai (2000), reports a significant effect of religion on antenatal care use in the rural area of Ghana. However, his analysis does not include major economic factors such as living standard and costs as possible determinants, and his estimates might thus be biased. His finding of an association of religion with antenatal care use might be confounded by differences in living standard between religious groups, as for example people with a traditional belief can be expected to be less economically developed and have a lower living standard. Addai (2000) find few effects of religion, and a special targeting of specific religious group to promote antenatal care use does not seem necessary.

CHAPTER THREE

STUDY AREA AND METHODS OF RESEARCH

3.1 STUDY AREA

3.1.1 Location and History

Funtua is a Local Government Area in Katsina State, Nigeria. Its headquarters are in the town of Funtua on the highway. It is located between latitude $11^0$14'59" and $11^0$39'.59"N and Longitude$7^0$19'.59" and $7^0$35' E. It has an area of 448 km² and a population of 225,571 at the

2006 Census. Funtua became a Local Government in 1967.

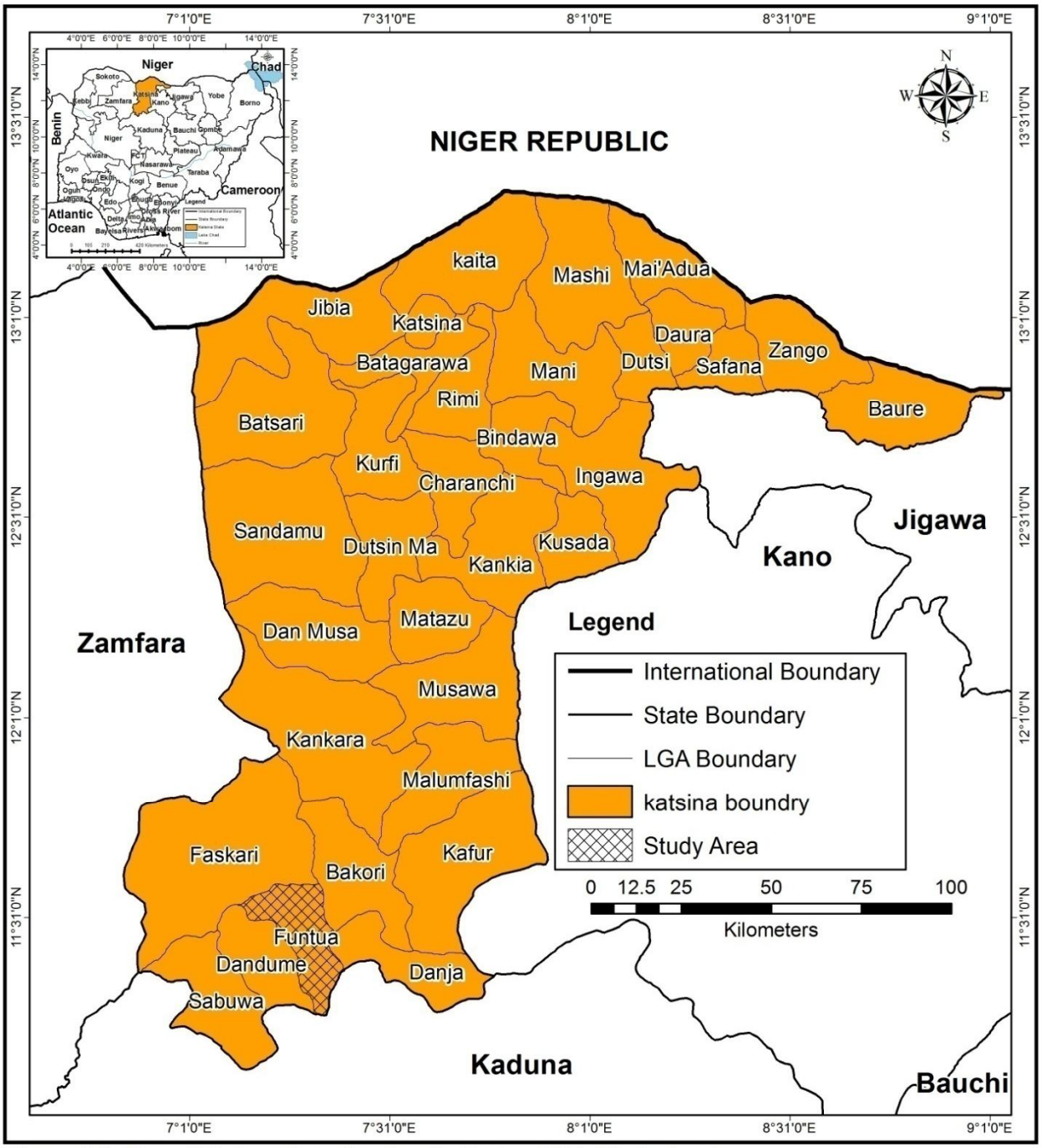


Figure 3.1: Map of Kaduna State showing the Funtua LGA (Study Area)
Source: Adapted and modified from the administrative map of Katsina State

The major districts in funtua include: Dikke, Maigamji, Maska, Tudun iya, Gardawa, Ung-hamida, Gwaigwaye, Dan-Fili, Goya, Yan-Randa, Ung-Fadi, Ung-Nunu, Gwauruwa,

Rafin-Dinya, Kaliyawa, Zamfarawa, Bakin-Dutse, Ung-Kankura, Ung-Kwando, Cibauna, Lasanawa, Dukawa, Ung-Biri, Kofar Yamma, Sabon Gari, Danlayi, Ung-Tofa (Wikipedia, 2011).

The chairman is the official Head of Local government. The inhabitants of the Local Government are predominantly Hausa and Fulani by tribe. Their main occupation is farming and Animal rearing.Migration and movement of people from different locations in search of green postures, security water and alike, usually results to the settlement of people in one place. In the early stage of settlement in the area, the rulers came across such experiences of hurdles, hardships, battles and raid for slave capture and consequently they survived all due to the existence of great worries at the early age who excelled in battle field and thus it pave way to the formation of smaller formidable kingdoms which later on developed into villages and towns (Abba, 2009).

In essence, feeling of safety and security encouraged people to migrate to the area under the leadership of two smaller kingdoms which the history of Funtua could not be complete without them, particularly in their great contributions, strategies and diplomacy during the period, the two settlements were that of Birnin Kogo and that of Funtua long before the coming of the colonial masters (Europeans). These two settlements were under the territorial control of Katsina from time immemorial precisely under the supervision of Galadanci. At the early stage the two settlements were separate entities, neighbouring one another on territorial lands. It was at a later period of their existence that the two were merged together and formed a District for Conveniences and smooth running administratively to Katsina Central. The predominant ethnic groups are the Hausa and Fulani . Other ethnic groups found in the area include Igbos, Yorubas, Nupes, etc. Over the years, Islam has been

the major religion in the area with people enjoying perfect peace and tranquility devoid of ethnic or religious intolerance. Furthermore, a great majority of the people are settled cultivators and traders.

3.1.2 Climate

The climate of the zone is tropical continental, having an annual rainfall of 198.3mm and a seasonal average temperature of more than 28^0c. Rainfall starts from May and ends November. However cloud cover is very low and insulation is therefore, high. Average daily sunshine hours are about seven months of the year. Solar radiation is 500 – 550kly per day and between 70 -80kly per annum and net radation is in the region of about 95kly per year. The climate information available in Katsina meteorological station reveal that the climate of Funtua is humid - tropical climate, characterized by a relatively long dry season and somewhat smaller duration wet season with a cool dry harmattan season in between these two major seasons.

Rainfall is experienced in Funtua when the warm moist tropical maritime air mass and the hot and dry tropical continental air mass in-teract. The two air masses meet along the Inter – Tropical convergence zone (ITCZ) which moves in response to the seasonal disposition of the overhead sun. Rainfall amounts are generally related to the thickness of the Tropical Maritime air mass. The tropical Maritime air mass is wedge shaped and thins northwards. Consequently, when the ITCZ moves Northwards over the study Area in may, rainfall becomes progressively heavier and more steady, reaching its peak at about August. In September, as the ITCZ moves southwards rainfall becomes lighter and sporadic Rainfall is concentrated in the months of July, August and September with figures generally less than 500mm annually.

The mean monthly dry season temperature is above 30^{O}c but significantly drop in the harmattan periods which strectch from November to February when the dry North East trade winds prevail. During this period, the ambient air mass is very dry and cold, dusty during the day and chilly at night. During this period night temperature can drop as low as between 18 and 21oc resulting in a relatively high diurnal range of temperature. In the rainy season months of July to September, temperature of about 22 -28^{0}c prevails. Information on relative humidity shows that the atmosphere is much more humid during the rainy season than the dry season. Mean relative humidity is lower than 50% in January and February and could be as high as 80% in July-August.

3.1.3 Relief and Drainage

It falls under the high plains of Hausa highlands with a gently rolling terrain. The highest places are due to gneisses and porphyrobla stic granites which form a saddleback at the west. The lowlands are underlain by the more easily weathered quartz feldspar-biotite, Schist and Serpentimite of the Basement complex. The streams generally have a north-south alignment. The Ungwaguagwa-Alikeai-Yankara footpath roughly demarcates the streams flowing north from those flowing south and its watershed. Most of the stream are strike controlled (seasonal in nature) notably the River Gauri and its numerous tributaries, while others flow north-west from Kondo which is thought to be "fault" controlled.

Funtua has very few rivers and lakes, many of those present are either intermittent/seasonal or reduced drastically in volume during the prolonged dry season (Babsal, 1998). It however, appears to be a hydrographically active region because of the water resources and most rivers take their sources from the basement complex plains and pediments in the center of the State. For instance, the Gada and Bunsuru rivers take their

sources from the plains and flow into 19 Zamfara State to become tributaries to the Rima River. The Sokoto River also takes its source from this region (Babsal, 1998). The available water bodies in the study area are sources of water used for irrigation of plants in the nurseries where agroforestry crops are raised and nurtured. And it is also a source of water for human and livesstock consumption.

3.1.4 Soils and Vegetation

The Soils are largely clayey soils (locally called "Laka") and about five meters in depth, and fine in texture. The soils are occasionally difficult to work, tending to become waterlogged with heavy rains and to dry out or crack during the dry season. Though, in funtua town and its surroundings the soils are more fertile in nature. The characteristics crops are cotton, maize, millet, Guinea corn, groundnuts etc.

The soil types found here range from shallow and moderately deep to very deep loamy, loamy-sand and sand-loamy soils.

The following soil types are identifiable over the area:

i. Recent alluvium soils of deep well drained and loamy sand found in the surface drainage channels. This soil type is found in areas with water courses.

ii. Deep well drained loamy sandy surfaces over sandy and clay loam found on the gently undulating plains with scattered outcrops and icebergs. This soil type covers over 70% of the area's entire landmass.

iii. Deep to very deep well drained loamy, sand with few gravelly surfaces found in the undulating plains with scattered outcrops. This soil type is found around Manula area and east of Malumfashi (Babsal,1998).

iv. Shallow and moderately deep, well-drained clay soils on the undulating plains with scattered outcrops found around Kankara, (Babsal, 1998).

Well aerated and rich soil promotes the growth and development of agroforestry trees by releasing suitable nutrients to the trees while degraded soils encoura`ges the growth of stunted and scattered trees. The area falls under the Northern-Guinea Savannah Zone, with a vegetation consisting of broad-leaved species with tall tussocky grasses of guinea affinities mixed up with fine-leaved species of thorny trees with continuous short and feathery grass cover. The vegetation has largely been exploited by man for firewood, grazing and cultivation.

3.1.5 Geology

The continental sediments of Funtua plains consist of feldspatic clayey standstones and grits with small basal pebble beds. The sediments have a maximum thickness of about 100 m (Dupra, 1994) and regional dip is to the north – west. The sediments thin to the south and in places, only the pebble beds remain on the higher interfluves. The southern boundary is diffuse and outliers are frequent, south of the main body. The sediments have been equated with the Gundumi formation of the Iullemmeden Basin (du preez and Barber, 1965) and therefore mid cretaceous in age. Alluvial deposits are associated with the present valleys. The older alluvium, which is partly colluvial in origin, forms a valley fill and may be contemporaneous with a high terrace found along the rivers. Aeolian deposits overlie the older alluvium. The Aeolian mantle lacks any definite pattern and also shows a marked variation in thickness. The younger alluvium occurs along the rivers within the present floodplain. Recent alluvial deposits are associated with the floodplains of the major rivers in the area. The area is blessed with abundant mineral resources, both metallic and non-metallic minerals yet to be

tapped. Minerals include nickel, iron-oxide, chromites, magnetite, kaolin, asbestos, silica sand, laterite clay, graphite, diamonds, potash, quartz.

3.1.6 Landform

Funtua lies in the great Hausa plains of northern Nigeria that is composed of basement complex rock that covers over 50% of the Nigerian landmass. Generally, the topography is gently undulating with an elevation of between 305m-610m with isolated inselberge and residual iron stone capped hills that lie between 610m – 905m above mean sea level interspersing the area (Babsal, 1998).

Generally, the following geomorphological regions are observable;

(i) Gently undulating sand and clay plains over quaternary Chad sediments;

(ii) Gently undulating sand plains over sandstone formation;

(iii) Gently undulating sandy drift plain with scattered iron stone hills and outcrops overlying basement complex rocks.

(iv) Gently undulating sandy plain over sandstone formation found in the northern most part of the State and dissected basement complex plains and pediments; and

(v) Outcrop of hills composed of younger granites.

3.1.7 Population and Socioeconomic Activities

Funtua Local Government Area has a total population of 225,571 with Males and female population of 118,703 and 106,868 respectively (NPC, 2009). The Local Government Area is made up of eleven wards. Seasonal migration takes place especially, of able bodied males in the dry season to the southern part of the area in search of part time jobs and off-

farmer labour. This is known as “Cin rani” A great majority of the people are settled cultivators and traders. But there is a considerable number of nomadic cattle Fulanis whose males rear livestock, while the Female hawk locally prepared fermented milk in towns and villages.

In drought years more people tend to migrate southwards from the northern part of the state on either temporal or permanent basis to avoid the consequence of drought menace. Indeed the southern part of the state receives immigrants from both within and outside the state. A sizeable number of migrants are from southern Nigeria especially the Yourubas and Igbos who usually dwell mostly in towns. Funtua L.G.A is a predominantly Hausa Fulani area. The L.G.A has no problem of urban primacy. The urban, semi urban location and the model villages, are evenly spread and are surrounded by other rural settlements. These three types of settlement form close knit economic, cultural, administrative and historical inter-relationship. Furthermore each has a fairly long historical link with Katsina city which has subsequently served as the headquarters of Katsina Emirate of Katsina province and now the capital of Katsina State.

In Funtua L.G.A, the significance of landuse include urban sprawl, soil erosion, soil and land degradation, salinization and deforestation. In recent years local government area in Funtua L.G.A have experienced rapid population growth especially in their headquarters, thus changing population size and commercial needs often necessitates demand for land and change in landuse plan. The major occupation of the inhabitants of Funtua L.G.A is farming. The crops grown include cotton, maize, millets, soya-beans and groundnut. Animal husbandry is also practiced by the inhabitants; the animals kept include cattle, sheep, donkey, horses and goats. Since time immemorial, Funtua L.G.A has traditionally been a home of many crafts

such as cloth weaving, raffia works, pottery, wood and calabash carvings, iron works and leather works. The art of iron smelting, for instance, was a great scientific technological achievement of the people in Funtua L.G.A. For well over a thousand years, the people had acquired the know how in identifying and extracting iron ore from the deposit, crushing and smelting it to metal which is forged into various tools and implements, as well as weapons. Farm and other house hold material were also made and these immensely improved the living conditions of the people.

Cotton cultivation also gave rise to the growth of indigenous textile industry. The textiles produced did not only satisfy the local demand but also became an important article of trade with neighbouring regions. Similarly pottery, which originated several centuries ago, has assumed an increasing position of importance. Today, pots are used for multifarious purposes, which include cooking, storage, flower and other domestic uses. This industry has been modernized through new technological devices such as klin and potters wheel. The leather industry is also a major activity producing excellent products for the home and other markets in the West African sub-region.

3.1.8 Health Infrastructure and Services

The existing health infrastructure and services available in Funtua L.G.A, Nigeria paint a bleak picture. Corruption and inequality combine with the evolution of a healthcare "system" that maintains an unclear division of roles and responsibilities across federal, state and LGA levels, weakening human and financial resources and capacities, and negatively impacting linkages and mechanisms across the three. The Nigerian government has made a more serious commitment in recent years to providing infrastructure, so it is a willing partner in changing this dire circumstance.

Northern Nigeria suffers from inadequate coverage and low-quality primary health care, which underlie its high rate of maternal deaths. In some States less than 20% of facilities provide essential obstetric care. Health providers lack the knowledge and skills to manage normal births or obstetric complications, or to provide adequate ANC. Few providers have the necessary skills to monitor labor, resuscitate a newborn or undertake manual removal of the placenta. Even where there are skilled attendants, poor interpersonal relations have been reported to impact negatively on utilization of medical services by women.

3.2 RESEARCH METHODOLOGY

3.2.2 Reconnaissance Survey

A Reconnaissance Survey was carried out in order to be well acquainted with the study area and the selected wards. This helped the researcher to have a better view of the study area, localities and other relevant information.

3.2.3 Sources of Data

3.2.3.1 Primary source of data

This was obtained from some structured of questionnaire administered through oral interviews and FGDs. The questionnaire was designed to elicit information on the following types of data:

i. Basic demographic data: sex, age, marital status, household size, level of education, social and economic characteristics: poverty, spousal income, occupation, number of children every born, women's education, contraceptive use, availability, accessibility ad utilization of Antenatal Care Services by the women in the area, staffing, drug routine, health counseling and equipments.

3.2.3.2 Secondary source of data

The secondary sources of data was obtained from books, journals, magazines, conference papers, National Population Commission (NPC) documents and materials from related websites. Also, the record of antenatal visits in the both government and private hospitals/health centers located in the study area was used. Some basic information was collected include quality of Antenatal Care services, health personnel, provision of effective and modern health care equipments, immunization routines, number of visits among others. This was used to generate data on literature review and study area.

3.2.4 Sample Size and Sampling Technique

Funtua Local Government Area has a total population of 225,571 with males and female population of 118,703 and 106,868 respectively (NPC, 2009). However, the female population was used for this study. The Local Government Area is made up of eleven wards. These are shown in Table 3.1:

Table 3.1: Wards in Funtua Local Government Area and selected wards

S/N	Number of Wards in LGA	Selected wards
1	Anguwan Dukke	
2	Anguwan Dutse	Anguwan Dutse
3	Anguwan Goya	
4	Anguwan Ibrahim	Anguwan Ibrahim
5	Anguwan Maigamji	
6	Anguwan Makera	Anguwan Makera
7	Anguwan Nasarawa	
8	Anguwan Musa	Anguwan Musa
9	Maska	
10	Sabon Gari	Sabon Gari
11	Tudun Iya	

Source: Reconnaissance survey, 2012

The wards were arranged alphabetically and all the even numbered wards were systematically selected to ensure a good geographical spread across the study area (see figure 3.2). To determine the sample size for this research, Krejcie and Morgan's (1970) method of determining sample size was adopted; where population size of 75,000-999,999 has a sample size of 382. Consequently 382 respondents were utilized for the study.

In selecting the respondents in each ward, a combination of simple random sampling and systematic sampling will be employed. Random sampling was used to select streets, while systematic sampling was used in locating households and Primary Health Care Centers/Hospitals. Starting with the first household o the street, every 3rd numbered household

on each street will be picked to get the sample locations for the administration of the questionnaire. To be able to attai the actual number to be administered in each ward, the five wards was arranged according to the number of the population in terms of high, medium and low as shown below:

H: High populated wards will be represented with 3' point

M: Medium populated wards will be represented with 2' point

L: Low populated wards will be represented with 1' point

Therefore, two wards (Anguwan Ibrahim and Sabon Gari) is highly populated, two other wards (Anguwan Dutse and Anguwan Makera) are medium populated while one of the wards (Anguwan Musa) has low population. To arrive at the number of questionnaire to be distributed to each ward. The distribution was

i. (Anguwan Ibrahim and Sabon Gari) 3 + 3 = 6

ii. (Anguwan Dutse and Anguwan Makera) 2 + 2 = 4

iii. (Anguwan Musa) 1 = 1

Total 11

For the highly populated wards:

$\frac{6}{11}$ X 382 = 208 therefore, each ward had 104 questionnaires each

For the medium populated wards:

$\frac{4}{11}$ X 382 = 140 therefore, each ward had 70 questionnaires each

For the highly populated wards:

$\frac{1}{11}$ X 382 = 34 therefore, this ward had 34 questionnaires

11

Table 3.2: Selected/sampled wards in Funtua Local Government Area number of sampled population

S/N	Wards	No. of female respondents
1	Anguwan Dutse (*Medium*)	70
2	Anguwan Ibrahim (*High*)	104
3	Anguwan Makera (*Medium*)	70
4	Anguwan Musa (*Low*)	34
5	Sabon Gari (*High*)	104
Total	**5**	**382**

Source: Reconnaissance survey, 2012

3.2.4 Method of Data Presentation and Statistical Analysis

The data obtained from the study were summarized using either absolute frequencies and/or proportions and then presented in tables. The summaries were analyzed using descriptive statistics namely measures of central tendency and dispersion/spread.

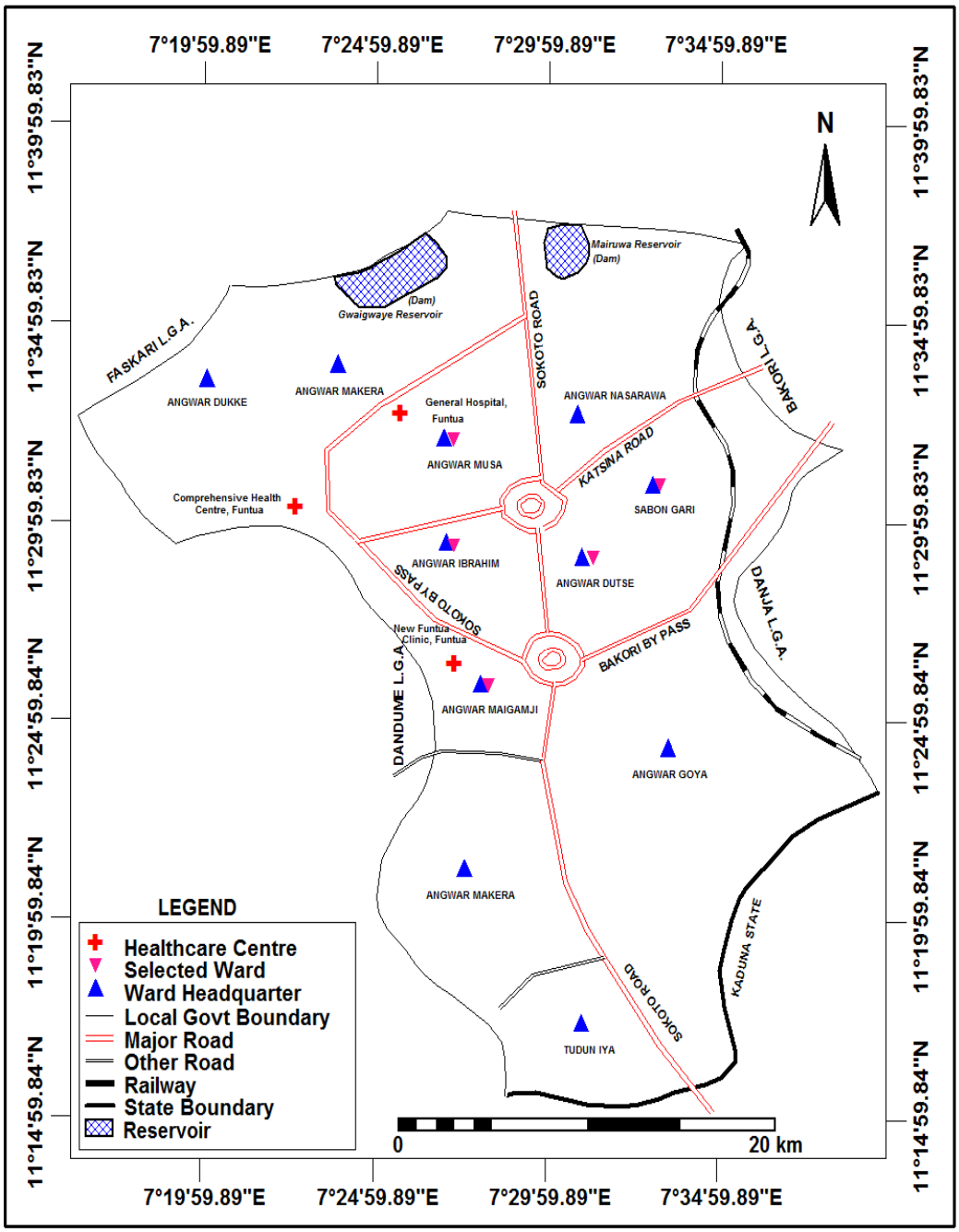


Fig. 3.2 Map of Funtua LGA showing the selected wards

3.2.5 Data Analysis

Both descriptive an inferential statistical test were employed in the analysis of data in the study. The descriptive statistics were mostly those of measures of central tendency and

dispersion was used in summarizing data gathered. The inferential statistics on the other hand was chi-square (X^2).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

This chapter deals with the analysis, interpretation and discussion of the data collected from a research work on "access and utilization of antenatal care services", the data were analyzed and presented using sample frequencies and percentages. Although 382 questionnaires were administered, only 333 were completely filled and valid for analysis. The result is therefore based on 333 respondents

4.2 DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

4.2.1 Age Distribution

Figure 4.1 shows the distribution of respondents by age. The result reveals that 66.3% of the respondents are between

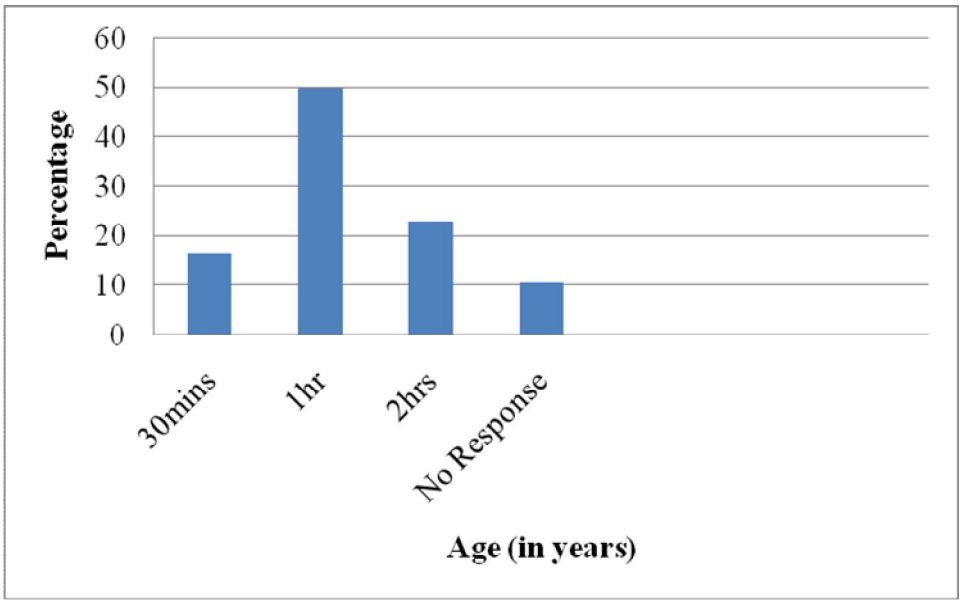


Figure: 4.1 Distribution of Respondent by Age Category

Source: Field Survey, 2012.

the ages of 20 and 34 years, while 23.1% are in the age group of 35 years and above. Less than 1% are below 15 years. This distribution is to be expected as the study targets women attending ante-natal care services and this age distribution is typical of women in reproductive age group. The finding also agrees with that of Peltzer and Ajegbomogun (2005) who found out that majority of the women who visit ANC falls within the age group of 20-34 of age.

4.2.2. Distribution by Marital Status, Type and of years in Marital Union

Table 4.1 shows the distribution of respondents by marital status and by type of marital union. Out of the total of 333 majority of the respondents (69.4%) are married, 9.9% are divorced, 5.7% are widowed and 4.2% are single. In all 10.8% did not respond. The high proportion of married women is not unexpected as data from the 2006 census indicate that majority of the households in Katsina State were in marital union (National Population Commission, 2009).

Table 4.1: Distribution by Marital Status and Type of Marital Union

Marital Status	Frequency	Percentage
Widowed	19	5.7
Divorced	33	9.9
Married	231	69.4
Single	14	4.2
No Response	36	10.8
Total	**333**	**100.0**
Type of Marital Union		
Monogamy	226	67.9
Polygamy	80	24.0
No response	27	8.1
Total	**333**	**100.0**

Source: Field Survey, 2012.

Table 4.2 further shows the distribution of respondents by type of marital union. It shows that 67.9% of respondents are in monogamous marriage, while 24.0% are in polygamy. A total of 8.1%did not respond to the question. The high proportion of those in monogamous union is rather curious given that Funtua in predominantly muslims. However, this could be explained by the fact that Funtua is an urban centre and in Nigeria the dominant of monogamous unions have been observed in urban centres.

A further analysis of the data reveals that, majority of the respondents (25.2%) have been married for over 10 years, 22.8% have been in marital union for between 3-4 years,

18.9% of the respondents have spent roughly 1-2 years in their marital union, 22.8% have spent 3-4 years, 9.9% have spent 5-6 years, 6.9% have spent 7-8 years, 9.9% have spent 9-10 years, while 6.3% did not respond (see Table 4.2).

Table 4.2: Number of Years in Marital Union

Years in Marital Union	Frequency	Percentage
1-2 years	63	18.9
3-4 years	76	22.8
5-6 years	33	9.9
7-8 years	23	6.9
9-10 years	33	9.9
10 years and above	84	25.2
No response	21	6.3
Total	**333**	**100.0**

Source: Field Survey, 2012.

The result implies that majority of the respondents (84 women) have spent more than ten (10) years in their various marital unions, followed by 76 women who have spent 3-4 years in their marital union. Number of years in marital union has significant impact on a woman's exposure to child bearing.

4.2.3. Distribution by Age at First Marriage

Table 4.3 shows that 7.5% respondents married at less than 15 years of age, 21.9% of the respondents have age at first marriage of 15-19 years while 30.0% indicate that their age at first marriage was between 20-24 years, In all 17.1% did not respond. The number of those

who did not respond would include those 18.3%married between the age of 25-29, and 5.1% have their first marriage at 30 years above, while 17.1% did not respond to the question. It implies that, majority of the respondents have their first marriage within the age range of 20-24 years.

Table 4.3: Distribution by Age at First Marriage

Age at first Marriage (yrs)	**Frequency**	**Percentage**
< 15	25	7.5
15-19	73	21.9
20-24	100	30.0
25-29	61	18.3
30-34	16	4.8
35 +	1	0.3
No response	57	17.1
Total	**333**	**100.0**

Source: Field Survey, 2012.

This distribution reflects the reproductive behaviours of women as already documented in many surveys (National Population Commission and ICF Macro, 2009). This confirms numerous studies elsewhere which found that age exhibited a positive influence on utilization of health care as in Awusi *et al*., (2009), Ahmed *et al*, (2002) and Atuyambe *et al*., (2005). This is because young mothers are assumed to lack experience in child bearing and

the fact that it may be the first pregnancy they ever had, puts a lot of fear in them such that they are compelled to visit a medical personnel more often (Mondal, 1997).

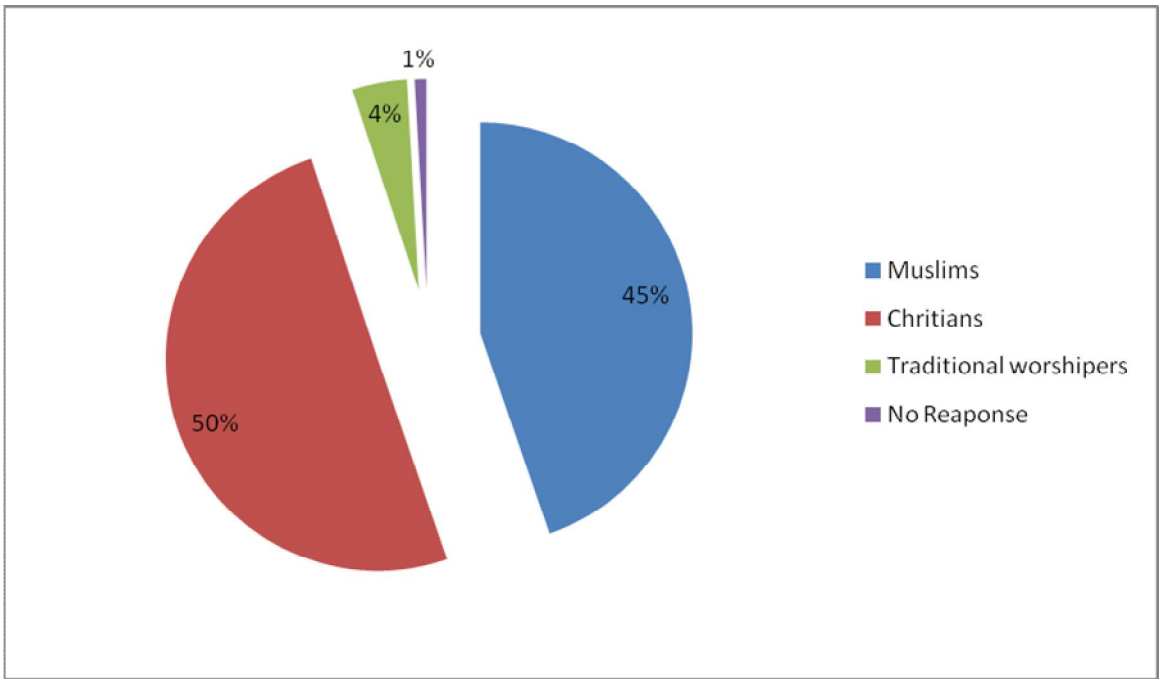
4.2.4. Distribution by Ethnicity and Religion

Table 4.4 shows that 36.6% of the respondents are Hausa/Fulani, 24.0% are Yorubas, 24.9% are Igbos, and 10.5% are northern tribes, while 3.9% did not respond to the question.

Table 4.4: Distribution of Respondents by Ethnicity

Ethnic Group	Frequency	Percentage
Hausa/Fulani	122	36.6
Yoruba	80	24.0
Igbo	83	24.9
Others	35	10.5
No response	13	3.9
Total	**333**	**100.0**

Source: Field Survey, 2012.



Figure, 4.3 Distributions of Respondents by Religion

Source: Field Survey, 2012.

Figure 4.2 shows that 45% of the respondents are Muslims, 50% are Christians, and 4% are traditional worshipers while no percentage responds to the question. The high proportion of Christians in Funtua could be as a result of their patronage to the ANC compare to their Muslims counterparts. However, his analysis does not include major economic factors such as living standard and costs as possible determinants, and his estimates might thus be biased. His finding of an association of religion with antenatal care use might be confounded by differences in living standard between religious groups, as for example people with a traditional belief can be expected to be less economically developed and have a lower living standard. We find few effects of religion, and a special targeting of specific religious group to promote antenatal care use does not seem necessary.

4.2.5. Distribution by Level of Education

As the educational level of the mother rises, the more likely she is to receive care from skilled providers. It is observed in Table 4.5 that, out of the total of 333 respondents, 3.9% do not have any form of formal education at all, 13.5% have acquired Qur'anic education, 7.8% of the respondents have only primary education, 31.8% have secondary education, and 42.0% have tertiary education.

Table 4.5: Distribution of Respondents by Level of Education

Level of Education	Frequency	Percentage
None	13	3.9
Qur'anic	45	13.5
Primary	26	7.8
Secondary	106	31.8
Tertiary	140	42.0
No response	3	0.9
Total	**333**	**100.0**

Source: Field Survey, 2012.

The high proportion of secondary (31.8%) and tertiary education (42.0%) shows that majority of the respondents are well-educated. This may be attributed to the fact that a well educated woman may have a better job and earn more money, which improves her economic access to resources and reinforces the effect of access to adequate information. This is similar to what Benefo, (2006), Wong *et al*., (1987) and Awusi *et al*., (2009) found in Ghana, the Philippines and Nigeria respectively indicating that education has a strong positive impact on the choice of maternal health care facilities. The importance of education in ANC can never be over emphasized. Infact education provides a unique opportunity to improve the health of

women and their infants and also brings about the utilization of ANC which provides opportunities for a full range of health promoting services that may include weight and blood pressure measurement, screening and treatment for syphilis, prevention and presumptive treatment of malaria in pregnancy and health education, among others. It is also important if girls can continue with education at the end of junior secondary school will help raise their age at marriage, allowing more time for them to reach reproductive maturity.

However, there is little and weak evidence of the effectiveness of antenatal classes (on, for example, mechanisms of labour and birth and relaxation techniques) and delivering written information about ANC. Therefore, it is not possible to give conclusive recommendations on these interventions (Gagnon, 2004). Moreover, the evidence shows that individualized prenatal education directed toward avoidance of caesarean births does not increase the rate of vaginal birth after a previous caesarean section (Gagnon, 2004 and Horey, Weaver and Russel 1998). There is not enough evidence to evaluate the use of a specific set of criteria for self-diagnosis of active labour (Lauzon and Hodnett, 2003). The effects of general antenatal education for childbirth and/or parenthood remain unknown (Gagnon, 2004). This also implies that as women's educational level rises, the chance that they would receive assistance from skilled providers also increases. Elo's, (1992) findings in Peru, and findings elsewhere in Ghana and Nigeria postulate that education has a positive impact on health care utilization (Appiah-Kubi, 2004; Awusi *et al*., 2009; Iyaniwura *et al.*, 2009; Tann *et al*., 2007). Reasons may be that those with no education could easily be persuaded by significant others such as grandmothers, in-laws or traditional birth attendants would neither go for antenatal care nor deliver their babies in hospital. Again lack of education can compound a woman's ability to make informed decision about her own health and thus she may not value modern obstetrics

care. Higher education is said to be associated with higher income, better occupation (professional) which ideally determines one's ability to afford and access basic and comprehensive health care at a minimal effort (Monir *et al*., 2009; Kiwuwa *et al*., 2008) and yet the findings reveal that only 15.7 percent with a minimum of secondary educational level.

4.2.6. Number of Children Ever Delivered and Birth Interval

As expected, as number of living children born to a woman increases, the less likely she is to make the recommended four antenatal visits. There is an inverse association between number of living children a woman has and her choice of health care providers during pregnancy.

Table 4.6: Distribution by Number of Children Delivered and Intervals

Children Delivered	**Frequency**	**Percentage**
None	25	7.5
1-2	129	38.7
3-4	95	28.5
5-6	40	12.0
7-8	8	2.4
9-10	7	2.1
above 10	5	1.5
No response	24	7.2
Total	**333**	**100.0**
Duration of Interval	**Frequency**	**Percentage**
1-2 year interval	43	12.9
2-3 years interval	223	67.0
4-6 years interval	18	5.4
7 + years interval	11	3.3
No response	38	11.4
Total	**333**	**100.0**

Source: Field Survey, 2012.

The Table 4.6 points out that, majority percentage of the respondents have only 1-2 children while only five 5 have 10 and above. This corroborates Obermeyer's (1993) findings

in Tunisia and Morocco that greater number of children increases the non-use of maternal health care services. Generally, as a woman's number of living children increases, the less likely she is to receive pregnancy care from a skilled health care provider. This is not different from Obemeryer's, (1993), Awusi *et al*'s., (2009) and Assfaw's, (2010) findings in Morocco-Tunisia, Nigeria and Ethiopia respectively that parity has a negative relationship with antenatal care usage. Reasons ascribed to this attitude include the experience women gain with each succeeding pregnancy and childbirth, and the time and cost pressures associated with larger families, which decrease utilization.

Table 4.6 also shows the birth order of respondents. It shows that 12.9% give 1-2 years interval before having any other child, 67.0% give an interval of 2-3 years, 5.4% indicate 4-6 years interval and 3.3% revealed seven years above (7+), while 11.4% did not respond to the question. The result indicates that, majority of the respondents of the study area practice interval of birth order which is 2-3 years.

4.3. ANTENATAL FACILITIES

4.3.1. Knowledge and Types of Antenatal Facilities

According to Table 4.7, out of the total of 333 respondents, 86.2% have knowledge of antenatal facility and 6.0% do not have any knowledge of antenatal facility, while 7.8% did not respond to the question. This implies that most of respondents have knowledge about antenatal facility, this is deduce from the high proportion of records which is 86.2%

Table 4.7: Distribution by Knowledge of Antenatal Facilities and Category of Antenatal Facilities

Knowledge of Antenatal Facilities	**Frequency**	**Percentage**
Yes	287	86.2
No	20	6.0
No response	26	7.8
Total	333	100.0
Categories of Antenatal Facilities	**Frequency**	**Percentage**
Dispensary	46	13.8
Clinic	115	34.5
Specialist Hospital	123	36.9
General hospital	21	6.3
Drug store	13	3.9
No response	15	4.5
Total	333	100.0

Source: Field Survey, 2012.

Table 4.8 also shows that, 13.8% respondents indicate dispensary as type antenatal facility they know, 34.5% indicate clinic, 36.9% say specialist hospital, 6.3% indicate general hospital, 3.9% have chemist while 4.5% did not respond to the question. It can be deduced that there might be some factors affecting respondents in knowing the types of antenatal facility present in there locality because one can never compare the activities carried out in specialists hospital to clinic.

4.3.2. Sources of Information on Antenatal Facility

The sources of information on antenatal facility is revealed in Table 4.8. In Funtua north west of Nigeria and 41.1% indicate that their sources of information on antenatal facility is the Television (TV), 35.1%reveal that their source of information is the Radio,

Table 4.8: Sources of Information on Antenatal Facility

Sources of Information	Frequency	Percentage
TV	137	41.1
Radio	117	35.1
Newspaper	19	5.7
Friend	45	13.5
TV, Radio & Newspaper	4	1.2
No response	11	3.3
Total	333	100.0

Source: Field Survey, 2012.

5.7% indicate that their source of information is from the newspapers, 13.5% indicate friends, 1.2% point out that they get their information from television, radio and newspapers, while 3.3% did not respond to the question. This reveals that majority of respondents receive their information on antenatal facility from the electronic media. The positive effect of education also suggests that through information campaigns women in Funtua can be made more aware of the importance of sufficient antenatal care for their health and that of their newborn children. On their first visit pregnant women could be advised to make at least four visits as recommended by WHO. Special attention is warranted for women with more pregnancy experience, who tend to use insufficient antenatal care. To increase efficiency in antenatal care provision and prevent redundant antenatal care visits, Katsina State could update its official guidelines for antenatal care according to the new standards promoted by WHO.

4.3.3. Distance to and Modes of Mobility to Antenatal Facilities

In rural area the distance to modern antenatal care providers can be considerable. The distance of antenatal facility is revealed in Table 4.9 where 26.4% points out that the distance to the antenatal facility is less than

Table 4.9: Distribution by Distance and Means of Mobility to Antenatal Centre

Distance to Antenatal Facilities	**Frequency**	**Percentage**
Less than 2km	88	26.4
2-4km	99	29.7
5-7km	55	16.5
8-10km	35	10.5
11-13km	31	9.3
No response	25	7.5
Total	333	100.0
Means of Mobility to Antenatal Facilities	**Frequency**	**Percentage**
Car	140	42.0
Motorcycle	99	29.7
Bicycle	16	4.8
Donkey	9	2.7
Foot	55	16.5
Car and motorcycle	6	1.8
No response	8	2.4
Total	**333**	**100.0**

Source: Field Survey, 2012.

2km, 29.7% revealed that it is 2-4km, 16.5% indicate it is 5-7km, 10.5% indicate 8-10km, 9.3% indicate 11-13km, while 25(7.5%) did not respond to the question. It is observed from the record that the distance of antenatal facility is moderate, although few respondents suffer to get to antenatal facility center due to far distance. Time and travel costs for repeated antenatal care visits would thus be large for these women, which might restrain their demand for antenatal care.

The means of mobility to antennal facility is pointed out in Table 4.14. Out of the total of 333 respondents 42.0% uses car as means of transportation to antenatal facility, 29.7% use motorcycle, 4.8% use bicycle, 2.7% use donkey, 16.5% use foot, and 1.8% use car and motorcycle as a means of transportation to the facility at all, while 2.4% did not respond to the question. The high proportion of those using private cars indicates that majority of the respondents do not have problem reaching the ANC in good time.

4.3.4. Visitation to Antenatal Care Centre and Reasons

The Table 4.10 reveal that, out of 333 respondents, 82.3% have visited an Antenatal Care Center (ANC), 11.4% have not visited to an Antenatal Care Center (ANC), while 6.3% did not response to the question.

Table 4.10: Visitation to an Antenatal Care Center and Reasons

Visitation to ANC	**Frequency**	**Percentage**
Yes	274	82.3
No	38	11.4
No response	21	6.3
Total	333	100.0
Reasons	**Frequency**	**Percentage**
For treatment	100	30.0
For consultation	55	16.5
For delivery	89	26.7
For counseling	44	13.2
Others	11	3.3
No response	34	10.2
Total	333	100.0

Source: Field Survey, 2012.

The low ANC rate found in this survey is consistent with earlier studies conducted in 2000 in rural Kano State of northern Nigeria where 12% of the women were reported to have attended ANC (Adamu and Salihu 2002). This also agrees with the study of Kabir; Iliyasu; Abubakar and Sani (2005) that in addition, 30 per cent of women receive no antenatal

treatment at all, with adolescent mothers and those who live in rural areas particularly unlikely to receive care. Many women in the north seek antenatal care, but deliver at home in part because they report finding the squatting position more comfortable for delivery than the supine position preferred at health facilities. While, across the country, many women still deliver at home, since 1990 the percentage of births in facilities has increased from 31 per cent to 37 per cent. Nonetheless, 58 per cent of women are not attended at all during labour and delivery. The experienced from the survey is the need to target outreach about the importance of ANC to those most at risk for not being aware of or able to access appropriate care. Although, it also implies that majority of the respondents have visited an Antenatal Care Center (ANC). There is also need to focus on women with no formal education and particularly those who have already had lost a newborn or young infant. To achieve these objectives, the antenatal care policy document spells out the routine management of pregnancy and the number of visits to antenatal care services a client is supposed to make. The World Health Organization nowadays recommends at least four such visits in the course of the pregnancy (WHO, 1994), since empirical evidence has shown that four visits suffice for uncomplicated pregnancies, and more visits are only recommended in case of complications (Villar *et al.*, 2001).

The demand for antenatal care from modern health care providers appears, according to the analysis, significantly determined by economic factors such as the household living standard, the costs for the antenatal care and in particular the costs related to the distance to health care facilities. To increase the use of sufficient antenatal care in Ghana, improving access to antenatal care in rural area seems the most effective policy instrument that directly affects the choices pregnant women make in this respect. In developing countries including

Uganda, several factors impede accessibility, including cost of services, distance to health services, lack of available transportation, high transportation costs, poor road conditions and uneven distribution of health care facilities and lack of independence by women to make decision on matters that directly affect their health (Tawiah, 2011; Magadi *et al*., 2003; Anarfi and Ahideke, 2006). All of these factors increase travel time and the difficulty in accessing health service facilities. In rural Uganda, physical accessibility and acceptability remains a significant challenge to health care service delivery. Currently more than a third of the rural women have to travel more than 5 km to the nearest modern provider of antenatal care. Accessibility of antenatal care may also be promoted by improving transport and telecommunication facilities at health centers where such care is provided, as experience in rural Uganda shows (Musoke, 2002).

Table 4.10 also shows that 30.0% out of the total of 100.0% respondents said that they went to an Antenatal Care Center (ANC) for treatment, 16.5% said that they went there for consultation, 26.7% use an Antenatal Care Center for delivery, 13.2% said that they went there for counseling, and 3.3% indicated that they went there for other purposes while 10.2% did not respondent. When women do receive ANC, it is generally not before the second trimester. Late ANC attendance does not provide women with a chance of benefiting fully from preventive strategies, such as iron and folic acid supplementation, and intermittent preventive malaria treatment in pregnancy among others. To encourage earlier ANC attendance, service delivery must be improved and communication messages that aim at removing barriers to ANC utilization should be increased. The high proportion for treatment implies that majority of the respondents use an Antenatal Care Center (ANC) for treatment. In comparison with findings by Tawiah, (2011) and Monir *et al*., (2009), the challenges above

recorded a slight rise in the proportion of women who reported to have encountered big problems in accessing health care. This leaves us with the question of what could have happened five years prior to 2006.

4.3.5. Ever Received Treatment at Antenatal Care Centre

Figure Table 4.2 points out that, out of the total of 100% respondents, 77.7 percent received prompt attention at the Antenatal Care Center (ACC),

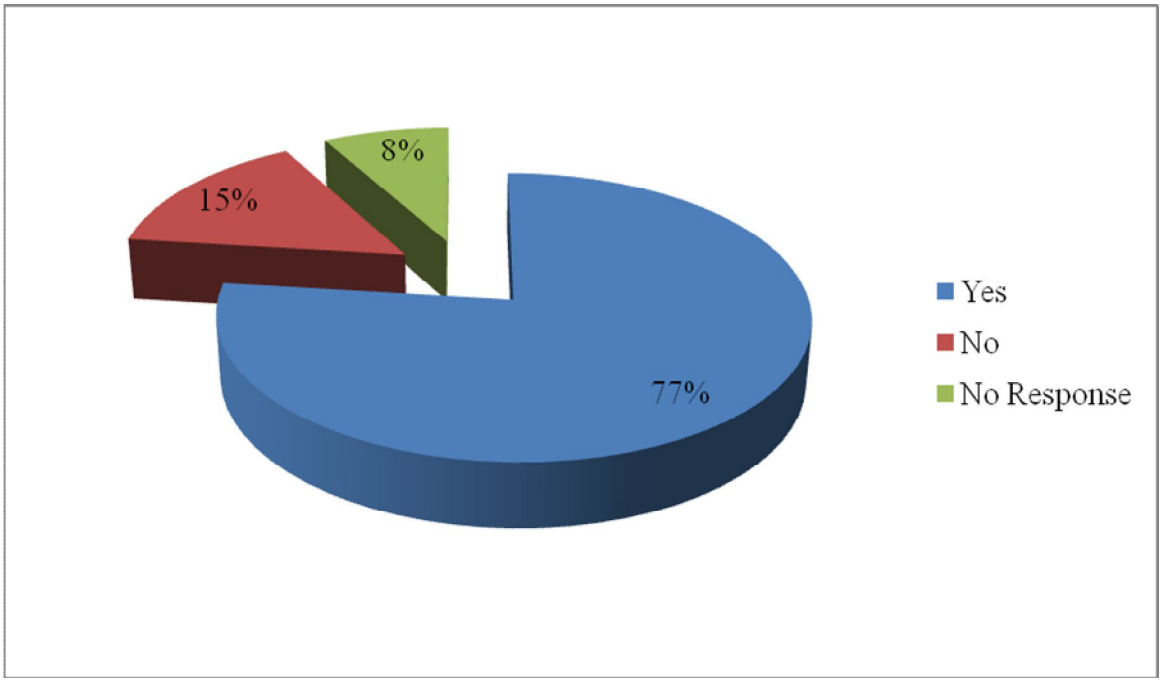


Figure 4.2 Respondents that have Received Treatment at ANC

Source: Field Survey, 2012.

15 percent indicated that they did not receive prompt treatment, while 8 percent did not respond to the question. This was contrary to Bhatia's (1995) and Asiimwe's, (2010) finding in India and western Uganda respectively that non-use was highest among young adolescent mothers (under 20years) than mothers aged (20-34 years). For instance in Uganda, pregnant adolescents feared to go for antenatal care because often they are intimidated or receive poor reception by health care provider (Kasolo *et al*., 2000; Tann *et al*., 2007). As far as policy is

concerned, age appears to have no significant relationship, thus it defines the complexity in considering age in predicting health care outcome (Addai, 2000; Appiah-Kubi, 2004; Wong *et al*., 1987). Through antenatal care and supervised delivery, the risks of maternal and prenatal complications can be reduced and the health of mother and child enhanced (an overview of the effectiveness of antenatal care is given in Carroli, Rooney and Villar, 2001; see also Afari *et al.*, 1995 for a case study in Ghana). Health agencies across the world have identified under-utilization of maternal and child health services as the major factor in the maternal mortality in the developing countries (Raghupathy, 1996).

4.3.6. Ever Experienced Difficulties in Delivery

According to Figure 4.3 20percent out of the total of 333(100.0%) respondents experience complications after delivery, 68 percent revealed that there was no any complications after delivery

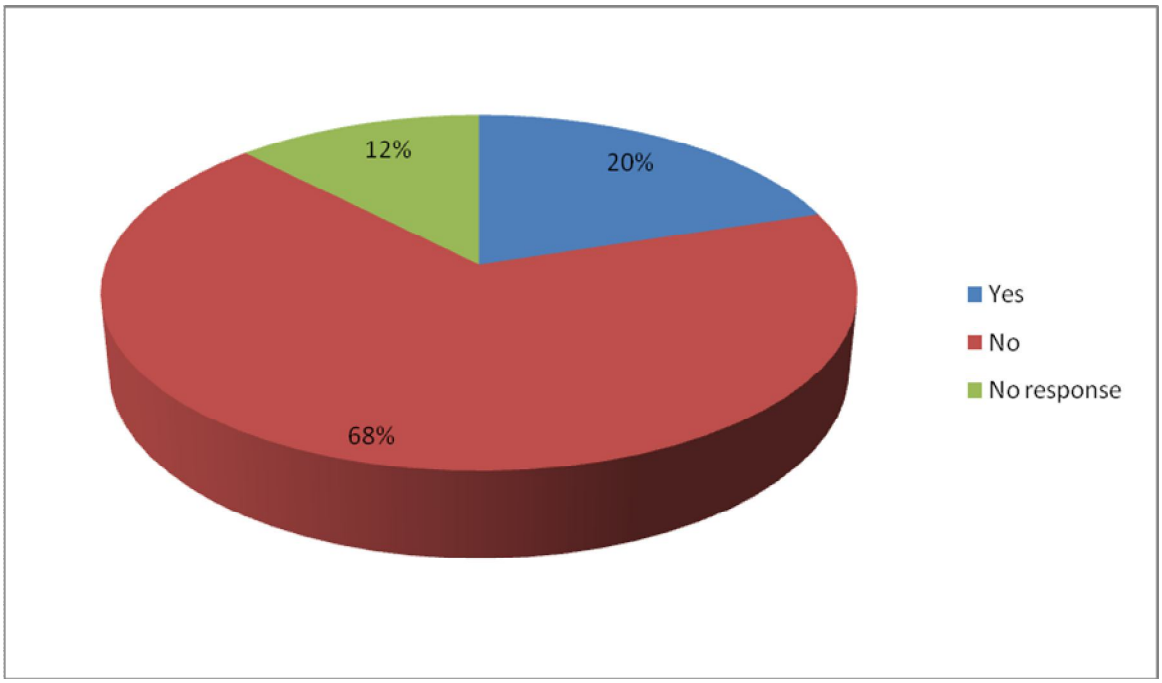


Figure.4.3: Repondents that have Experience Difficulties at Delivery

Source: Field Survey, 2012.

while 12 percent did not respond to the question. The high proportion of respondents that say 'Yes" to the questions indicates that majority of the respondents have not experienced complication after delivery.

4.3.7: Adequacy and Attitude of Health Personnel

Respondents were asked to state if the health personnel were adequate in the centres. Table 4.11 reveals that 64.6% say the health workers were adequate as against 21.3 percent that say they were not adequate. In all, 14.1% did not respond. Better educate attendants to help women in labour, motivate them to work in remote regions.

Table 4.11: Reception of Respondents on Adequacy and Attitude of Health Workers in the ANCs

Adequacy of health workers	**Frequency**	**Percentage**
Yes	215	64.6
No	71	21.3
No Response	47	14.1
Total	**333**	**100.0**
Atittudes of health workers	**Frequency**	**Percent**
Good	160	48.0
Average	111	33.3
Poor	24	7.2
Very poor	11	3.3
No response	27	8.1
Total	**333**	**100.0**

Source: Field Survey, 2012.

Community midwives who can provide high quality care for the antenatal period, including labour, should be available to women who choose to deliver at home. In addition, these providers will need to develop efficient referral systems if emergencies arise. Providing them with adequate salaries and equipment appears to be of paramount importance.

On the attitudes of health workers towards patients, 48.0% said health workers treat patients well, 33.3% said that the treatment given to health worker is average, 7.2% said the treatment is poor, 3.3% said it is very poor, while 8.1%did not respond to the question. Medically, adolescents are more prone to complications during pregnancy, delivery and the period after. The few who seek for medical care are often intimidated by health providers which demoralizes them from seeking quality maternal health care. For instance, one of the respondent asserted that *"When I come here for ANC and the nurses start examining me, they abuse me and even blame me for getting pregnant at a young age, yet I got pregnant without knowing [laughter]. They say "What were you looking for you young girl? Now you are going to die innocently". The end result of this is that I am not going back for ANC as I fear the health workers"*. This often discourage them from returning for the service. As reported in Atuyambe *et al*., (2005), among adolescents on the experiences that often medical staff have poor receptions with such intimidating mentality that would deter one form returning for health care service at a health facilities or receive assistance from skilled attendants but would rather prefer TBAs.

4.3.8: Wait-Time During Antenatal

Table 4.15 shows the distribution by the duration of services. Accordingly, 55(16.5%) of the respondents said it takes 30 minutes to access services at ANC, 166(49.8%) said it takes 1 hour after arriving the ANC, 77 (23.1%) indicated 2 hours after arriving the ANC while 10.5% did not respond to the question.

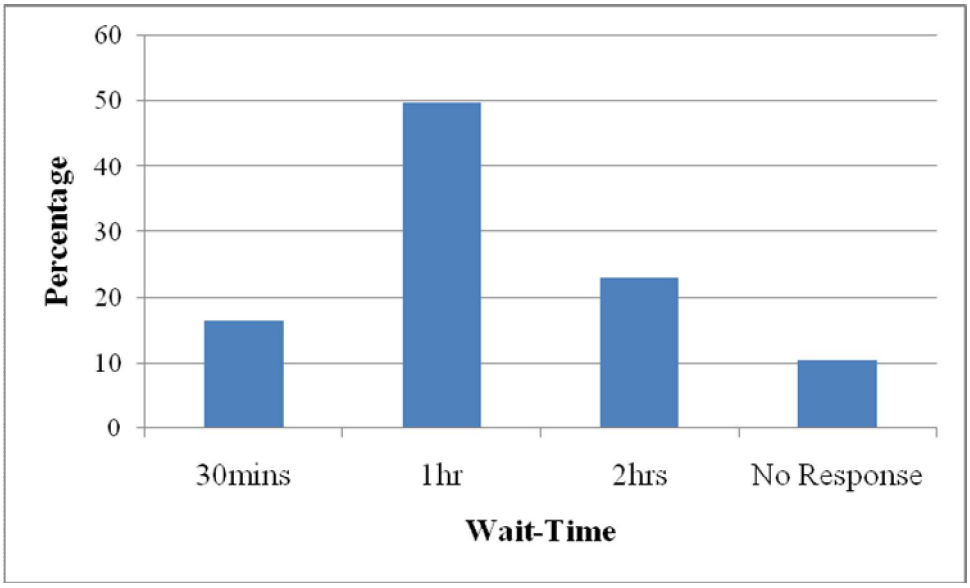


Figure 4.4 Wait-Time During Antenatal

Source: Field Survey, 2012.The high proportion of 49.8% implies that respondents are attended to shortly after arriving the ANC center. In addition, older mothers are not willing to stay long at health facilities and also not ready to travel long distance due to some other responsibilities such as other younger children left home with no one to take care of them. This was contrary to Bhatia's (1995) and Asiimwe's, (2010) finding in India and western Uganda respectively that non-use was highest among young adolescent mothers (under 20years) than mothers aged (20-34 years).

4.3.9 Mortality rate of relative/friends during pregnancy and Availability and Cost of Drugs at ANC

Table 4.12 shows that 30.2% of the respondent's relatives/friends died during pregnancy, 53.8% indicated that none of their relatives/friends died during pregnancy while 16% did not respond. About 4.13, 64.3% of the respondents said that there are drugs in their own hospital/clinic, only 5.7% claimed that there is no drugs in their attending hospital/clinic. The high proportion of 64.3% of respondents said 'Yes" to availability of drugs in their

attending hospital/clinic implies that majority of hospital/clinic surrounding the study area have drugs for their patients.

Table 4.13: Mortality rate of Relative at pregnancy, Availability and Cost of Drugs at ANC

Motarlity Rate	**Frequency**	**Percent**
Died	101	30.2
None	179	53.8
No respond	53	16.0
Total	**333**	**100.0**
Availability of drugs	**Frequency**	**Percent**
Available	214	64.3
Not available	19	5.7
No response	100	30.0
Total	**333**	**100.0**
Cost of drugs	**Frequency**	**Percentage**
Expensive	28	8.4
Moderate	185	55.6
Cheap	61	18.3
No response	59	17.7
Total	**333**	**100.0**

Source: Field Survey, 2012.

Table 4.13 shows that, only 8.4% of respondents said that drugs are expensive, 55.6% confirmed that drugs are sold at moderate prices, 18.3% said that drugs are cheap while 17.7% did not respondent to the question. The high proportion of 55.6% implies that the cost of drug is affordable inANCs found in the study area. These are evidenced from related findings which argue that the cost of accessing health services is generally high as well for pregnant women, both in terms of time required to get to the facility as well as the fees for maternal services and lack of control of domestic resources by women has been shown to delay decision making about seeking health care (Appiah-Kubi, 2004; Magadi *et al*., 2003; Tawiah, 2011).

4.3.10 Contribution of ANC to Community Development

Table 4.14 shows that 8.4% of the respondents said that ANC brought construction of roads to the study area (Funtua), 23.4% said it provides infrastructure, 46.8% claimed that it improves standard of living while 21.3% did not response to the question.

Table 4.14: Contribution of ANC to Community Development

Contribution	Frequency	Percentage
Construction of roads networks	28	8.4
Provision of infrastructure	78	23.4
Improved standard of living	156	46.8
No response	71	21.3
Total	333	100.0

Source: *field survey, 2012.*

The high proportion of 46.8% confirmed that the standard of living of respondents in Funtua Local Government was improved as a result of the Antenatal Care Center (ANC) in the study area. Family and community involvement is crucial for healthy home behaviours during pregnancy and has been shown to be a major determinant of use of ANC services. Establishing links between the community and the facility can increase utilisation of services, including ANC, and impact maternal and neonatal mortality as well as stillbirths. Community health workers (CHW) can played a key role by identifying all pregnant women in the community and provide counselling on healthy lifestyles, birth planning, complication readiness, and the need for ANC and skilled care at birth. This helped create links between the community and the healthcare system, and reinforcing these health messages can take some of the burden off service providers in ANC clinics. A further look at the contribution of ANC to

community development indicates that 66.7% of respondents said that ANC provides constant immunization, 14.7% said 'No' while 18.6% did not respond to the question.

4.3.11 Immunization Provided at Antenatal Care Center (ANC)

Table 4.15 shows that Antenatal Care Center (ANC) provides constant immunization, this is observed from the high frequency of 222 respondents recorded highest with 66.7%, some of these immunizations include polio, caugh and so on. As stated by Villar and Kanh-Neelofur, (2001), tetanus immunization during pregnancy can be life-saving for both mother and infant. Immunization against tetanus is effective for preventing neonatal tetanus (NNT), which causes approximately half a million deaths/year and maternal tetanus, which is estimated to cause 30,000 deaths annually.

Table 4.15: Constant Immunization Provided by Antenatal Care Center (ANC)

Immunization	Frequency	Percentage
Yes	222	66.7
No	49	14.7
No response	62	18.6
Total	333	100.0

Source: Field Survey, 2012.

4.3.12 Perception of the Health Care Problems

Table 4.16 shows that the major health care problems of the people include dirty surrounding (21.0%), insufficient health workers (12.0%) and unqualified personnel (6.3%). The above results can be supported by results from a qualitative study in Uganda by Kasolo *et al*., (2000) which indicated women reporting that, "*Sometimes pregnant women may lack money to transport them to the health facilities and that to be paid as fees.*" Young woman-

Kasese. Further still, "Health facilities are sometimes located in long distances which discourage pregnant mothers" Young man-Kamuli.

4.3.13 Statistical Cross-tabulations of Coping Strategies with some selected variables

The Chi-square test on Level of education and the type of clinic patronage shows a calculated value of 227.85 with 21 degree of freedom and a P value of 0.001. This shows the relationship is statistically significant. This implies that the education of respondents determine the type of antenatal clinic to visit.

Table 4,16 Statistical Cross-tabulations of Coping Strategies with some selected variables

Variables	Calculated X^2	Degree of freedom	P-value	Remark
Education	227.85	21	0.001	Significant
Occupation	263.14	14	0.001	Significant
Age	353.43	35	0.001	Significant
Marital Status	128.75	7	0.001	Significant
Religion	174.95	14	0.001	Significant

Source: Field Survey, 2012
P is significant when it is less than 0.05

The Occupation of the respondents is one of the variables that were cross-tabulated with the type of antenatal clinic visited and the result showed the calculated value is 263.14 with 14 degree of freedom and a P value of 0.001. These results show that there is a significant relationship between the Occupation and the antenatal clinic type that the

respondents visit. The implication is that the present Occupation of the respondents affects the type of clinic visited.

Type of antenatal clinic visited and Marital status variable was also cross-tabulated and the result revealed 128.75 as the calculated value, degree of freedom 7 and a P value of 0.001. This shows there is a significant relationship between the sex and coping strategies. This signifies that the sex of respondent determine the type of coping strategies to be adopted.

The religion of the respondents is another variable that was cross tabulated with type of antenatal clinic visited and the result showed that the calculated value is 174.95 with 14 degree of freedom and a P value of 0.001. These results show that there is a significant relationship between religion and coping strategies of the respondents. The implication is that religion of the respondents affects the type of coping strategies to be adopted.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The study of "access and utilization of antenatal care services" in Funtua local government area could be said to be important in the life of women most especially pregnant women in order to bring about a better way of living among women and pregnant mothers. What contained in this chapter is summary of findings, conclusion, recommendation as well as suggestion for future research.

5.2. SUMMARY OF FINDINGS

Considering the purpose of this research it has been observed that wellbeing of women most especially pregnant women is very important in the society. To achieve sound health by women in the society, there is the need for women to understand the level of their health and if pregnant the level of the baby's health. They should understand how to live in perfect health, take care of themselves to prevent the spread of disease and also at the course of delivery there will be no course for alarm.

5.3 CONCLUSION

Based on the outcome of the study, the following conclusions were made:

i. Lack of proper accessibility of antenatal facility have an influence on pregnant women in Funtua local government.

ii. The proper funding of antenatal care center have brought about the development of the locality, and an improvement in the standard of living of the people.

iii. Islam, the predominant religion in the northern states, strongly supports education of both boys and girls. To this end, traditional and religious leaders can serve as key

partners, as can organizations currently working in education. Antenatal education, especially when combined with postnatal education using a set of different interventions, is effective for increasing the breastfeeding initiation rate and prolonging exclusive breastfeeding (Elbourne 1992., Stockley 2005.,Tedstone, Duce andAviles 1998).

5.4 RECOMMENDATIONS

Based on the findings of this study and its limitations, the researcher recommends the followings:

1. Pregnant women should be offered information based on the current available evidence together with support to enable them to make informed decisions about their care. This information should include where they will be seen and who will undertake their care, this should be done in order to avoid improper knowledge on their health
2. Women with any risk factor should be properly checked and treated in order to bring about a sound delivery.
3. Inadequate health centers can cause great effect on the wellbeing of women most especially pregnant mothers, so therefore, health care center should be provided in various local governments in order to avoid distance as being an excuse of location of health care center, or if possible vehicles be provide to various local government to bring about efficient transportation to the health care centers.
4. In relation to the ill-equipped health care facilities, it is recommended that all health care center should be replaced with new ones by the center or by government, in order to help the health workers to effectively deliver their services.

5. For effective delivery of services, health care centers should try and employ more staffs if short of staff, this will help in attending to patient in time without delay.
6. Also contentiousness of staff to patients should be advocated by ANC management so that more pregnant women (particularly young mothers) will be encourage to patronize ANC.

5.5 SUGGESTION FOR FURTHER RESEARCH

The health of women and most especially pregnant mother cannot be completely discussed here because it is very wide. Thus, it is not fully exhausted in this research. The researcher therefore, suggests that studies should be carried out in other aspects of the wellbeing of women and pregnant mothers like digging deep into the health center to know the kind of services rendered, kind of drugs and injections given, also perception of health care workers and patient on factors influencing the effectiveness of child delivery.

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APPENDIX A

QUESTIONNAIRE (FOR WOMEN)

Ahmadu Bello University,

Zaria.

Faculty of Sciences,

Department of Geography

Dear Sir/Madam,

'AN ASSESSMENT OF THE ACCESS AND UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN IN FUNTUA LOCAL GOVERNMENT AREA, KATSINA STATE'

The purpose of this questionnaire is to gather information on how women in Funtua Local Government Area assess and utilize Antenatal Care Services.

All the information obtained shall be treated as confidential and used strictly for the project aforementioned in partial fulfillment of the requirement for the award of Masters in Sciences (M.Sc) in Geography, Ahmadu Bello University, Zaria.

I will be very grateful if you respond to the questions accordingly.

ONAMADE ADERONKE

(Researcher)

SECTION A: DEMOGRAPHIC AND SOCIO ECONOMIC CHARACTERISTICS OF THE RESPONDENTS

Instruction: Where the answer is yes or no, tick the appropriate box thus: Yes [√] No [√]

1. Age: a) < 15 years ( ) b) 15-19 ( ) c) 20-24 ( ) d) 25-29 ( ) e) 30-34 ( ) e) 35-39 ( ) f) 40-44 ( ) g) 40-44 ( ) h) 45-49 ( ) i) 50-54 ( ) j) 55-59 ( )

k) 60+ ( )

2. Sex: Male ( ) Female ( )

3. Ethnic group: a) Hausa ( ) b) Fulani ( ) c) Southern Kaduna ( )

4. State of origin: a) Kaduna ( ) b) Kano ( ) c) Katsina ( )

d) Others (specify)……..

5. Religion: a) Islam ( ) b) Christianity ( ) c) Traditional/Pagan ( )

6. Level of education: a) Primary ( ) b) Secondary ( ) c) Tertiary ( )

d) None ( ) e) Others (specify)…….

7. Level of education of husband: a) Primary ( ) b) Secondary ( ) c) Tertiary ( ) d) None ( )

e) Others (specify)……..

8. Marital status: a) Single ( ) b) Married ( ) c) Separated ( ) d) Divorced ( ) e) Widow/Widower ( )

9. Age at first marriage: a) 10-14 years ( ) b) 15-19 ( ) c) 20-24 years ( )

d) Above 25 ( )

10. Occupation: a) Farmer ( ) b) Trader ( ) c) Civil servant ( )

d) House-wife ( ) e) Others……

11. Income per month: a) N1, 000-4,000 ( ) b) N5,000-8,000 ( )

c) N9,000-12,000 ( ) d) N13,000-16,000 e) N17,000-20,000 ( )

f) above N20,000

12. Number of years in marital union: a) 1-2 years ( ) b) 3-4 years ( )

c) 5-6 years ( ) d) 7-8 years ( ) e) 9-10 years ( ) f) above 10 ( )

13. Type of marital union: a) polygamy ( ) b) monogamy ( )

c) others (specify) ……

14. Number of children ever born: a) 1-2 ( ) b) 3-4 ( ) c) 5-6 ( ) d) 6-7 ( ) e) 8-9 ( ) f) 9-10 ( ) g) above 10 ( )

15. Birth order: a) 1 year interval ( ) b) 2-3 year interval ( )

c) 4-6 year interval ( ) 7+ year interval ( )

16. Birth size: a) Small/very small ( ) b) Average or larger ( )

17. Types of accommodation available to you: a) One room apartment ( )

b) Two room ( ) c) Flat/bungalow ( ) d) Duplex ( )

18. Ownership of accommodation: a) Official ( ) b) Rented ( ) c) Owned ( )

d) Others (specify)…….

SECTION B: FACTORS INFLUENCING ACCESSIBILITY AND UTILIZATION OF ANTENATAL SERVICES

19. What is the distance from you house to the nearest health Care Center? a) 1km ( ) b) 2km ( ) c) 3km ( ) d) 4km ( ) e) 5km ( )

f) Others (specify)……....

20. Do you have assess to the health facilities? a) Yes ( ) b) No ( )

21. Did you visit the antenatal care service when pregnant? a) Yes ( ) b) No ( )

22. If yes, at what period of your pregnancy? a) First trimester ( )

b) Second trimester ( ) c) Third trimester ( ) d) Cannot remember ( )

23. On your own, are you aware of any complication during pregnancy?

a) Yes ( ) b) No ( )

24. If yes, what complications? a) Severe headache ( ) b) Blurred vision ( ) c) Reduced fetal movement ( )

25. If you have never visited the Antenatal Care Service, what was your source of advice during pregnancy? a) Traditional birth attendants ( )

b) Family members ( ) c) Friends ( ) d) Co-wives ( )

26. Do you make any preparation for birth? a) Yes ( ) b) No ( )

27. If yes, what form of preparation do you make? a) Provisions for

clean clothes ( ) b) Prepared for clean instruments for delivery ( )

c) Preparations for transport if needed to a health facility ( ) d)

Other preparations (specify)……

28. Do you prefer home delivery or the hospital? a) Home delivery ( )

b) Hospital delivery ( )

29. If home delivery, why? a) it is comfortable ( ) b) it is not necessary to go elsewhere ( )

c) For privacy reasons ( ) d) Against the local custom ( )

e) Its safer ( ) f) No permission from husband ( ) g) Cost less ( )

h) Attitude of health workers in health centers ( )

i) Others (specify)……..

SECTION C: QUALITY OF ANTENATAL SERVICES AND PERSONNEL IN FUNTUA L.G.A

30. What kind of activity takes place when you visited the Antennal Care Service? a) Your weight was recorded ( ) b) Your blood pressure was measured ( ) c) You received an anti-tetanus vaccination ( ) d) You received breastfeeding counseling ( ) e) You received newborn counseling ( ) f) You received anti-malarial treatment ( ) g) You were told about the signs of pregnancy complications ( )

31. After being counseled during your antenatal care visits, what do you know about pregnancy complications? a) convulsions ( ) b) high blood pressure ( ) c) Vaginal bleeding ( )

32. What are the condition of the health care centers and their personnels?

a) Very neat ( ) b) Dirty ( ) c) Fairly neat ( )

d) others (specify)…….

33. What is the attitude of the health personnels in the health care centers?

a) Very positive ( ) b) Poor ( ) c) Manageable ( )

34. Are you attended to quickly or you spend much time during antennal visit? a) I spend much time ( ) b) I am being attended to quickly ( ) c) I am not always attended to quickly ( )

35. Do they have sufficient health workers in the health center? a) Yes ( )

b) No ( )

SECTION D: EFFECTS OF POOR ACCESSIBILITY AND UTILIZATION OF ANTENATAL CARE SERVICES OF WOMEN ON THE HEALTH OF THE MOTHER AND BABY

36. Have you every given birth at home? a) Yes ( ) b) No ( )

37. Are you aware of the complications that may arise when you give birth at home? a) Yes ( ) b) No ( )

38. Has it ever resulted in any negative consequence? a) Yes ( ) b) No ( )

39. If yes, specify: a) Death of baby ( ) b) Sickness after birth ( )

c) Other complications ( ).

40. Why do you still decide to give birth at home? Religious factor ( ) cultural/traditional factor ( ) Husband's influence ( ) Economic/financial factor ( ) Others (specify)…….

APPENDIX B

QUESTIONNAIRE (FOR HEALTH PERSONNEL)

Ahmadu Bello University,

Zaria.

Faculty of Sciences,

Department of Geography

Dear Sir/Madam,

'AN ASSESSMENT OF THE ACCESS AND UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN IN FUNTUA LOCAL GOVERNMENT AREA, KATSINA STATE'

The purpose of this questionnaire is to gather information on how women in Funtua Local Government Area assess and utilize Antenatal Care Services. All the information obtained shall be treated as confidential and used strictly for the project aforementioned in partial fulfillment of the requirement for the award of Masters in Sciences (M.Sc) in Geography, Ahmadu Bello University, Zaria.

I will be very grateful if you respond to the questions accordingly.

ONAMADE ADERONKE

(Researcher)

SECTION A: BIODATA

1. Age: a) < 15 years ( ) b) 15-19 ( ) c) 20-24 ( ) d) 25-29 ( ) e) 30-34 ( ) f) 35-39 ( ) g) 40-44 ( ) h) 40-44 ( ) i) 45-49 ( ) j) 50-54 ( ) k) 55-59 ( )

l) 60+ ( )

2. Sex: Male ( ) Female ( )

3. Level of education: a) Primary ( ) b) Secondary ( ) c) Tertiary ( )

d) None ( ) e) Others (specify)……..

4. Marital status: a) Single ( ) b) Married ( ) c) Separated ( ) d) Divorced ( ) e) Widow/Widower ( )

5. Occupational status: a) Doctor ( ) b) Nurse ( ) c) Attendant ( )

d) Midwife ( ) e) Others (specify)…….

6. Years of working experience: a) < 1 year ( ) b) 2-3 years ( ) c) 4-6 years ( ) d) 7- 10 years ( ) e) 10+ ( )

SECTION B: NATURE AND QUALITY OF ANTENNAL SERVICES/PERSONNEL

7. Do women frequently visit he health care center for antenatal services?

a) Yes ( ) b) No ( ) c) sometimes ( )

8. If yes, how frequent per week? a) 1-5 times ( ) b) 6-10 times ( )

c) 11-15 times ( ) d) 16+ ( )

9. What kind of activity takes place in the Antennal Care Service?

a) Weight recording ( ) b) Blood pressure measurement ( ) c) Anti-tetanus vaccination ( )

d) Breastfeeding counseling ( ) e) Newborn counseling ( )

f) Anti-malarial treatment ( ) g) Signs of pregnancy complications ( )

10. Are the women who come for antenatal care literate? a) Yes ( ) b) No ( )

11. Is the hospital/health center well equipped? a) Yes ( ) b) No ( )

12. Are there adequate staff? a) Yes ( ) b) No ( )

13. Are there inst aces where women are brought to the hospital due to complications from trying to give birth at home? a) Yes ( ) b) No ( )

14. Do you operate 24 hours service or less than that a day? a) 24 hours service ( ) b) Less than that ( )

15. In what ways, do you think antennal services can be improved in Funtua Local Government Area?.....

……

…….