

**MATERNAL HEALTH CARE SERVICES UTILIZATION AND BREASTFEEDING
PRACTICES: COMPARISON AMONG TEENAGE AND NONTEENAGE MOTHERS
IN NIGERIA.**

BY

MARTINS OLAYEMI ABIOLA

(154518)

A DISSERTATION SUBMITTED IN PARTIAL FUFILMENT

OF

THE REQUIREMENT FOR THE DEGREE OF MASTERS OF SCIENCE (MSC)

IN EPIDEMIOLOGY OF THE UNIVERSITY OF IBADAN

DEPARTMENT OF EPIDEMIOLOGY, MEDICAL STATISTICS

AND ENVIRONMENTAL HEALTH (EMSEH)

FACULTY OF PUBLIC HEALTH, COLLEGE OF MEDICINE,

UNIVERSITY OF IBADAN, IBADAN, NIGERIA.

JULY, 2011

ABSTRACT

Background: Teenage pregnancy is a common public health problem affecting nearly every society- developed and developing alike. There is a growing awareness that early child bearing has multiple consequences in terms of maternal health, child health and over all well-being of society. Utilization of maternal health facilities by women of child bearing age has direct bearing on maternal and infant morbidity and mortality. Little is known about the pregnancy and delivery outcomes among teenage mothers and their level of utilization of maternity services. This study compared the utilization of maternal healthcare services and breastfeeding practices among teenage and non teenage mothers.

Method: This study is a secondary data analysis of the 2007 National HIV/AIDS and Reproductive Health Survey (NARHS Plus) – a nationally representative household survey of males and females of reproductive age group. Comparison of maternal health care services utilization and breastfeeding practices between 240 teenage and 3364 non teenage mothers in Nigeria who had a baby during the five years preceding the survey was carried out. Differences in maternal care and breastfeeding variables were tested using the Chi-square test, Mann-Whitney U test and logistic regression. Ninety five percent confidence intervals for odds ratios were reported from the logistic regression.

Results: The mean age of the teenage(TM) and non teenage mothers(TM) were 17.6 (SD=1.2) and 32 (SD=7.9) respectively. The prevalence of teenage childbearing in the study population was 6.7%. Higher proportions (80.4%) of TM were more of rural dwellers compared to 67.9% NTM ($p<0.001$), more 47.1% teenage mothers than 26.8% non teenage mothers were residents of North western geographical zone ($p<0.001$), about two-third of the TM and a little over half of the NTM are Muslims by religion ($p<0.001$). Majority, 97.7% of the NTM compared to 88.1% TM were currently married at the time of study ($p<0.001$).

Non teenage mothers utilized maternal health care services better compared to the teenage mothers. The TM were less likely to receive ANC compared to the NTM (OR=0.89, 95%CI=0.66-1.20). The predictors of ANC utilization among TM were: location (OR=3.52, 95%CI=1.22-10.21) and education (OR=0.24, 95%CI=0.08-0.73) while for the NTM location, education and zones were the predictors.

The teenage mothers were also less likely than the non teenage mothers to obtain PNC (OR=0.56, 95%CI=0.39-0.79). The only predictor of PNC among the TM was education but among NTM the predictors were zone, location, education and television viewing habit

There was no significant difference between the two groups concerning breastfeeding practices (OR=1.14, 95CI=0.59-2.21). None of the variables were predictors of breastfeeding practices among the TM but for the NTM, zone and location were the predicting factors.

Conclusion: Though utilization of the available maternal health care services is generally low, teenage mothers have poorer levels of utilization of these services. Effective interventions targeting teenage mothers should focus on rural women, never married, of lower level of education and residence in northern zones of the country.

Keywords: teenage mothers, non teenage mothers, ANC, PNC, breastfeeding.

Word count: 472.

ACKNOWLEDGEMENT

I wish to thank my supervisor Dr. B.O Adedokun who despite his busy schedule has taken time to continually review my work and advise me accordingly. Your guidance, assistance, critics and encouragement saw me through this project work.

My sincere appreciation also goes to the lecturers in EMSEH, Faculty of Public Health, University of Ibadan for their valuable contributions and for impacting knowledge to me.

My special thanks also go to the Ajayis, Dr Sakeeb, Dr Majek and KKM family, RWC, UCH Ibadan for their love, encouragement and support. My wonderful friends and colleagues are not left out, I appreciate you all.

My sincere gratitude I give to my parents: Captain & Mrs S. O Martins (rtd), siblings, aunts, uncles and in-laws for believing in me, their support and love at all times.

Above all I give glory to the Almighty God who is my wisdom and strength, and for another opportunity to increase in knowledge to serve my generation.

CERTIFICATION

I certify that this project by MARTINS, OLAYEMI ABIOLA of the Department of Epidemiology, Medical Statistics and Environmental Health, College of Medicine, University of Ibadan was carried out under my supervision.



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Dr B. O ADEDOKUN

MB,BS (Ib), MSc Epid & Med Stat (Ib),

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LIST OF ACRONYMS

ANC: Antenatal care

BM: Breast milk

CHP: Care with a health professional

DHF: Deliveries within a health facility

EA: Enumeration Areas

EBF: Exclusive breastfeeding

FMOH : Federal Ministry of Health

MC: Maternity care

MMMR: Maternal mortality and morbidity ratio

NARHS: National HIV/AIDS and Reproductive Health Survey

NDHS: National Demographic health survey

NMR: Neonatal Mortality ratio

NPC: National Population Commission

NTM: Non Teenage Mothers

PNC: Postnatal care

SPSS: Statistical package for social Science

TM: Teenage Mothers

UNICEF: United Nations Children's Fund.

WHO: World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The World Health Organization in 2007 reported that approximate estimates of 536000 maternal deaths occur annually, of which 95 per cent occur in sub-Saharan Africa and Asia. Adolescent girls face considerable health risks during pregnancy and childbirth, accounting for 15% of the Global Burden of Disease (GBD) for maternal conditions and 13% of all maternal deaths (WHO, 2006) and those aged 15–19 years are twice as likely to die in childbirth while those under 15 are five times more likely to die in childbirth and finally, infant and child mortality is also higher among children born to adolescent mothers (WHO, 2007).

Adolescents constitute about 20 to 30 percent of the world's population with about 85 percent of them in developing countries while in Nigeria they comprise about a fifth of the national population (NDHS, 2008a).

The teen age period covers the age of 10-19 years. Adolescence is a distinct and important biological and social stage of development. The word teenager is synonymous to the word adolescence and the two words could be used inter-changeably. Adolescence or teen age represents a transition from childhood to adulthood with features including secondary sexual growth, changes in hormonal milieu, emotional, cognitive and psychological development (WHO, 2010a).

One in four girls in the world becomes a mother before the age of 19 years, and every year an excess of 14 million teenage girls give birth to a child, most of these young mothers living in non-industrialized countries. Its incidence is particularly high in Africa where majority of the world's young people live (Mutahir, 2006).

With an estimated 59,000 maternal deaths, Nigeria which has approximately two percent of the world's population contributes almost 10% of the world's maternal deaths (FMOH, 2005).

Interest over the years has grown in the area of infants, maternal death and adolescent health because maternal health care services utilization provides opportunity for early detection of diseases and timely treatment. It also provides opportunities for preventive health care services such as immunization against neonatal tetanus, prophylactic treatment of malaria through the use of intermittent presumptive treatment approach, and HIV counseling and testing. Furthermore, antenatal care (one of the indicators of maternal health care services) exposes pregnant women to counseling and education about their own health and the care of their children. With the strong positive association that has been shown to exist between level of care obtained during pregnancy and the use of safe delivery care, antenatal care also stands to contribute indirectly to maternal mortality reduction (WHO, 2007b).

Adolescent mothers were significantly more disadvantaged in terms of health care seeking for maternal and child health services and face more challenges during pregnancy and early motherhood compared to adult mothers (Lynn et al, 2008).

WHO recommends that all recently delivered women and their newborns should receive PNC from a skilled provider on days 1, 3, and 7, and six weeks after childbirth (FMOH, 2005).

The provision and utilization of maternity care (MC) services have been recommended as basis for formulation, implementation and monitoring of programmes directed at reducing maternal and child morbidity and mortality all over the world. Provision of skilled attendant for delivery care, along with equipment, drugs and supplies necessary for effective management of obstetric complications has been described as the single most important factor in preventing maternal death (WHO, 2001).

Epidemiological studies support the association between breastfeeding and reduced infant morbidity and mortality in both developing and industrialized nations, particularly against otitis media and gastrointestinal and lower respiratory illnesses (Perez and Guerrero, 2004).

Breastfeeding initiation rates and duration among adolescent mothers are lower than among adult women and teenagers' attitudinal, social, ethnic/racial, perceived control and commitment factors are influential in choosing breastfeeding or bottle-feeding (Spear, 2004).

The underlying factors that contribute to the high maternal and infant mortality rates in Nigeria 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 (NDHS, 2008b).

Utilization of maternal health services is associated with improved maternal and neonatal health outcomes. (Babalola and Fatusi, 2009).

There is little knowledge of antenatal care, postnatal care and breastfeeding practices among young adolescent mothers; in the USA, mothers under 18 years old breastfed their infants considerably less than older mothers (Jolly et al, 2000, WHO, 2004).

There is little or no data or research at national level comparing Nigerian mothers (both the teenage or adult mothers) in terms of maternal health care services utilization and their breast feeding practices.

2.2 PROBLEM STATEMENT

Teenage childbearing is a worldwide problem and is of public health importance with varying prevalence rate. The adolescent fertility rate worldwide was 52.0 per thousand for the 2000-2005 period, meaning that on average about 5.2 percent of adolescents give birth each year (WHO, 2010b).

Pregnancy-related complications continue to be a leading cause of death and disability for women of reproductive age. Women in sub-Saharan Africa most often face suboptimal management of pregnancy and delivery complications, as only 46.5% of births are attended by a skilled health professional (34.2% and 39.6% in Eastern and Western Africa, respectively) compared with 83.2% in Latin America and the Caribbean and virtually all births (> 99%) in industrialized countries (WHO, 2007a).

Higher maternal and neonatal mortality rates have been observed among mothers who deliver at high and low extremes of maternal age. This is particularly true for women under 20 years and those over 40, as they are more prone to complications during pregnancy and childbirth that affect both them and their babies. Childbearing during the teenage years frequently has adverse social consequences, particularly regarding educational attainment, because women who become mothers in their teens are more likely to curtail their education. The NMR for babies born to mothers less than 20 years old was 61 per 1,000 live births, compared with a significantly lower 39 per 1,000 live births in mothers aged 20–29. One quarter of teenage women aged 15–19 have already begun to bear children, and 47% have become mothers by age 20 (FMOH, 2011).

Younger mothers (less than 20 years old) are more likely to have low birth weight infants when compared with older mothers (10 percent compared with 7-9 percent, respectively). The underlying factors that contribute to the high maternal and infant mortality rates in Nigeria 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 (NDHS, 2008a).

Wales, 2010 in his article reported that of the 13 million children born to women under age 20 worldwide, more than 90% in developing countries and childbirth are the leading causes of mortality among women between the ages of 15 and 19 in such areas.

Pregnancy and childbirth are the leading cause of death among women adolescents (Mayor, 2004; Reynolds et al, 2006).

Nigeria is a leading contributor to the maternal death figure in sub-Saharan Africa not only because of the hugeness of her population but also because of her high maternal mortality ratio. Nigeria's maternal mortality ratio of 1,100 is higher than the regional average (WHO, 2007b).

In Nigeria, despite the fact that most mothers consider breast milk as the best food for infants, reports indicate that the majority do not practice optimal breastfeeding, and exclusive breastfeeding for the first six months of life is still as low as 17% (NDHS, 2003).

2.3 JUSTIFICATION

Although there is extensive knowledge of the implications or outcomes of none or inadequate utilization of maternal healthcare services and breastfeeding practices (Tella et al, 2008, Babalola and Fatusi, 2009, WHO, 2004) there is still a high incidence of maternal and infant/child mortality in sub Saharan countries and Nigeria is one of the countries with the highest MMR/infant mortality rate (NDHS, 2008). Use of these maternal care services by women of reproductive age is low in many countries, and use by adolescents will roughly reflect the general level of care in a particular country. The use of maternal health services is an effective means for reducing the risk of maternal morbidity and mortality. This study will examine the extent to which teenage mothers use these services, and whether they are relatively disadvantaged compared to older women.

Also, there is little knowledge of breastfeeding practices among young adolescent mothers, human breast milk as defined by WHO is the optimal food for newborn infants and breastfeeding has to be started as early as possible, preferably in the first hour following birth. Very few population-based studies have been carried out in Nigeria regarding comparison of maternal healthcare services utilization and breastfeeding practices in teenage and non teenage mothers. Therefore, it is against this background that this study becomes relevant in studying Nigerian mothers, especially the teenage ones at National level to obtain a more precise and accurate result.

2.4 OBJECTIVES OF THE STUDY

BROAD OBJECTIVE

The main objective of this study is to compare the maternal health care services utilization and breast feeding practices among teenage mothers and non teenage mother.

SPECIFIC OBJECTIVES

The specific objectives of this study are to:

Compare the socio-demographic characteristics of teenage and non teenage mothers.

Determine the prevalence of teenage childbearing.

Compare the utilization of antenatal and postnatal clinic services between teenage and non teenage mothers.

Compare breastfeeding practices between teenage and non teenage mothers.

Determine the predictors of maternal health services utilization and breastfeeding among teenage and non teenage mothers.

2.5 RESEARCH QUESTIONS

Do non teenage mothers utilize maternal healthcare services more than the teenage mothers in Nigeria?

Is there a difference in the breastfeeding practice of the teenage mothers compared to the non teenage mothers?

What are the predictors of ANC and PNC utilization among teenage mothers and -non teenage mothers?

2.6 HYPOTHESES

'There is no difference in the percentage ANC and PNC utilization between teenage and non teenage mothers'.

'There is no difference in the breastfeeding practices of teenage and non teenage mothers'.

'There is no association between maternal healthcare utilization and sociodemographic characteristics of the respondents such as: location, age at marriage, marital status, level of education region and religion'.

'There is no association between breastfeeding and sociodemographic characteristics of the respondents such as: location, age at marriage, marital status, level of education, region and religion'

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CHAPTER TWO

REVIEW OF LITERATURE.

2.1 Adolescents.

Adolescence (from Latin: *adolescere* meaning "to grow up") is a transitional stage of physical and mental human development generally occurring between puberty and legal adulthood (age of majority), but largely characterized as beginning and ending with the teenage stage (Wikipedia). Adolescence represents a transition from childhood to adulthood with features including secondary sexual growth, changes in hormonal milieu, emotional, cognitive and psychological development, the passage from childhood into and through adolescence is composed of a set of transitions that unfold gradually and that touch upon many aspects of the individual's behavior, development, and relationships. These transitions are biological, cognitive, social, and emotional (Rank, 2011). Adolescents constitute about 20 percent of the world's population with about 85 percent of them in developing countries. The adolescent period covers the age of 10-19 years (WHO, 2010).

Teenagers or adolescents all over the world attract attention and have tended to begin childbearing during the adolescence period, an issue complicated by conflicting attitudes and behaviors (Alan Guttmacher Institute, 2004).

Teen age constitutes a high risk group requiring high priority services. United Nations also remarked that early child bearing is a high health risk for both mother and child (UNICEF, 2011).

2.2 Reproductive health situation of the Nigerian adolescents.

The review of literature reveals that about 16 million adolescent girls aged 15-19 give birth each year, roughly 11% of all births worldwide. Almost 95% of these births occur in developing countries; half of all adolescent births occur in just seven countries: Bangladesh, Brazil, the Democratic Republic of Congo, Ethiopia, Nigeria, India and the United States (WHO, 2010).

Teenage mothers are three times more likely to die as a result of the complications of pregnancy and delivery than those aged 20-24 (Aboyeji et al, 2001).

In 2002, it was reported that Nigeria had the highest teenage fertility rate of 124 per 1,000 compared to other African countries as obtained from Teenage fertility and total fertility rates (Siv and Seble, 2007)

Findings from the 2008 National Demographic Health Survey (NDHS) reveals that 23% of women age 15–19 are already mothers or are pregnant with their first child. Teenage childbearing is highest in the North West zone (45%) and lowest in the South East zone (8%).

At sub regional level, a higher proportion of teenage pregnancies were found in women residing in the North East and North West areas of the country (WHO, 2009).

Singh et al, 2004 reported that 17.6 per cent of Nigeria's adolescents have given birth (126 births per 1, 000 women).

Akinrinola et al, 2007 reported in their study that use of the condom among ever sexually active adolescents aged 15-19 is moderately high.

Adolescents in Nigeria have high burden of sexual and reproductive health problems. Adolescent girls contribute 55% of all clandestine abortions in the country (Fatusi, 2005).

According to the result of the study done by Aderibigbe et al, 2010 it was reported that less than half of respondents in the study (49.6%) and control (46.3%) groups were aware of any form of contraception at pre-intervention. Studies from western and southern Nigeria have found rates of contraceptive use among sexually active adolescents of about 30% (Arowojolu and Adekunle, 2000). It was documented by UNICEF that Contraceptive prevalence in Nigeria between 2003 - 2008 is 15%.

2.3 Utilization of ANC and PNC in Nigeria

A woman is exposed to the risk of maternal mortality every time she becomes pregnant. The more often she gets pregnant, the greater is the cumulative risk of maternal death over a lifetime. Thus, a lifetime risk would be considerably reduced if woman had access to safe and effective

contraceptive services. But once a woman is pregnant, skilled medical care is essential to ensure her safety and that of her infant (WHO, 2007; UNICEF, 2009).

The major objective of antenatal care is to ensure optimal health outcomes for the mother and the baby (NDHS, 2008). In many developed and developing countries the antenatal care of adolescents is inadequate. They often book late for antenatal care (in the second or third trimester) or they do not receive care at all. In developing countries, only 53% of births are assisted by a skilled person (WHO, 2004).

The provision and utilization of maternity care (MC) services have been recommended as basis for formulation, implementation and monitoring of programmes directed at reducing maternal and child morbidity and mortality all over the world. Provision of skilled attendant for delivery care, along with equipment, drugs and supplies necessary for effective management of obstetric complications has been described as the single most important factor in preventing maternal death (WHO, 2001).

Children of mothers who receive antenatal care are more likely to be healthy and survive than children whose mothers have no visits during pregnancy as they have a significantly high risk of stunting (Girma and Genebo, 2002).

There are wide gaps in coverage between the rich and the poor which underscore the level of inequity in healthcare utilization in Nigeria. (UNICEF, 2009).

Nwogu, 2009 in his study on the utilization of maternity care in Nigeria reported that the percentage of deliveries within a health facility (DHF) is least among women under 20 years of age (with about 12.6%) and highest among women aged 20-34 years (with about 35.8%), the percentage of deliveries within a health facility, increased with increasing mother's education. The percentage increased from about 10.3 percent among mothers with no education to about 88.1 percent among those with more than secondary education and that among the regions in Nigeria, the percentage of deliveries within a health facility is lowest in the Northwestern Nigeria (with about 10.4%) and highest in the Southeastern region (with about 84.1%).

Coverage of at least one antenatal care (ANC) visit with a skilled care provider reaches 62% of women. Rural and poor women are least likely to attend ANC and attendance varies greatly by state. The content of ANC visits does not reflect a focused ANC package of interventions. Only

45% make four or more ANC visits, and fewer (36%) make their first ANC visit during the first three months of pregnancy. Only 45% of mothers receive the recommended two or more doses of TT, with figures as low as 7% in some states (FMOH, 2011).

One third of women receive postnatal care within the first two days of birth, but the content of this visit, especially the care provided to the baby, is unknown. Early postnatal care could prevent up to one quarter of newborn deaths through promotion of healthy behaviors such as hygiene, warmth and early and exclusive breastfeeding, and through recognition and care seeking for danger signs (FMOH, 2011).

Antenatal care is an important indicator to evaluate and to measure the present situation of maternal health care services in any country. Providing skilled attendants for delivery care, along with the equipment, drugs and supplies necessary for effective management of obstetric complications is the single most important factor in preventing maternal deaths. Also, Antenatal care (ANC) provides an opportunity to monitor the health of mother and baby, to detect hypertension, anaemia or malaria, and offer tetanus toxoid immunization and iron and nutrition supplements as appropriate (WHO, 2004; NDHS, 2008).

In Nigeria, Approximately three-fifths (60.3%) of the mothers used antenatal services at least once during their most recent pregnancy, while 43.5% had skilled attendants at delivery and 41.2% received postnatal care. Education is the only individual-level variable that is consistently while socio-economic level is a consistent significant predictor at the household level (Babalola and Fatusi, 2009).

The mean number of antenatal visits differed significantly across the rural and urban areas of the geopolitical regions and agro ecological zones. In the rural areas, the lowest mean number of visits is less than 2 in North East and North West compared to 7 in the South East and close to 9 in the South West. Although WHO recommends four visits, antenatal care service in Nigeria is still patterned after the traditional schedule that recommends monthly visits until 28 weeks of gestation, fortnightly visits until 36 weeks, and weekly thereafter until delivery. Thus, different studies provide a range of mean number of antenatal care visits such as mean number of visits of 4 with a range of 1-12 (Ajieroh, 2009).

In Nigeria, women's wealth status is one of the determinants of receiving skilled care. Women at the poorest situation had approximately 6.5 times less access to skilled care compared to their richest counterparts (WHO, 2009).

Also, in Nigeria, available evidence shows that the levels of provision and utilization of maternity care services are still very low. According to NPC (2004), about 36.9 percent of all women who had live births in the five years preceding the 2003 NDHS did so without any antenatal care, about 50.5 percent attended antenatal care at most three times before delivery, more than two percent started ANC when their pregnancies were at least eight months, while about 18.7 percent started when their pregnancies were at least six months old. Furthermore, the levels of delivery with a health professional and within a health facility are very low (NPC, 2004).

The utilization of maternal health services is associated with improved maternal and neonatal health outcomes. The most significant individual-level predictors of use of antenatal care services are education, age at the birth of last child, and attitudes towards family planning (Babalola and Fatusi, 2009).

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. 43% of the teenage mothers received care from skilled attendants (NDHS, 2008).

Owolabi et al, 2008 at the Wesley Guild Hospital Unit, Ilesa, Nigeria in their study on Maternal complications and perinatal outcomes in booked and unbooked Nigerian mothers reported that 5% of the teenage mothers who had prenatal care and delivery booked while 0.9 per cent of them did not book.

The age of mothers clearly stands out to be one of the most important factors both in the utilization of antenatal care (ANC) and choice of the ANC provider, mother's education and mother's location is highly positively associated both adequate and inadequate ANC (Sakar, 2009).

Ikeako et al, 2006 in their study found that formal education is still a significant predictor of whether women deliver within or outside health institutions in Enugu, south-eastern Nigeria.

Gage 2006, found that in Nigeria, factors responsible for the non utilization of maternal health services were; poverty, lack of education, and residence in the northeast and northwest regions were associated with non-receipt of recommended antenatal or delivery care.

The percentage of mothers who received ANC from a health professional (or care with a health professional (CHP) or skilled attendants in the 2003 NDHS appears higher among those aged 20-49 years than among those under 20 years (Nwogu, 2009).

Postnatal care (PNC) refers to both routine preventive and curative services provided in the period after birth until six weeks after birth (WHO, 2011).

Postnatal care for mothers includes examination of her nutritional status, treatment for anaemia and advice on diet, childcare, breastfeeding, weaning and family planning. Large proportion of maternal and neonatal deaths occurs during the first 48 hours after delivery. Thus, postnatal care is important for both the mother and the child to treat possible complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child (Wikipedia).

In sub-Saharan Africa, there are 41 neonatal deaths per 1000 live births, of which 75% occur within the first 7 days of life; and 32 stillbirths per 1000 deliveries, of which 24–37% are intrapartum deaths and these rates are among the highest worldwide (WHO, 2006).

According to the latest survey in 2008 in Sierra Leone, 38% of mothers were seen for the first check up within 4h, 8% within 4-23h, 12% within 1-2 days, 5% within 3-41 days after the delivery. More than half of women had received postnatal care in health facility. 74% of women in the richest group received postnatal care within two days of delivery, compared with 47% of women in the poorest group (WHO, 2010).

According to NDHS 2008, more than half (56%) of women did not receive any PNC; only 38% received a postnatal check-up within two days of delivery and this varied by zones.

2.4 Breastfeeding practices in Nigeria

Breastfeeding is the process of feeding the infant with mother's milk, either by direct nipple-baby mouth contact or by expressed breast milk. Human breast milk is the optimal food for newborn infants and breastfeeding has to be started as early as possible, preferably in the first hour following birth. There is little knowledge of breastfeeding practices among young adolescent mothers; in the USA, mothers under 18 years old breastfed their infants considerably less than older mothers (Jolly et al, 2000, WHO, 2004). Breast-feeding is considered the most complete nutritional source for infants because breast milk contains the essential fats, carbohydrates, proteins, and immunological factors needed for infants to thrive and resist infection in the formative first year of life (Jones et al, 2003).

Breast milk (BM) has superiority over any other milk nourishment of the human newborn and infant and this can hardly be challenged, and over the years it has become more and more apparent that it is the most ideal, safe and complete food that a mother can provide for her newborn (Alemayehu et al, 2009).

Exclusive breast feeding is the practice of feeding the infant for the first six months of life on breast milk only, without any other type of food, not even water. Exclusive breastfeeding (EBF) for the first 6 months of life improves the growth, health and survival status of newborns and is one of the most natural and best forms of preventive medicine. EBF plays a pivotal role in determining the optimal health and development of infants, and is associated with a decreased risk for many early-life diseases and conditions, including otitis media, respiratory tract infection, diarrhoea and early childhood obesity. It has been estimated that EBF reduces infant mortality rates by up to 13% in low-income countries (Chung et al, 2007).

African nursing mothers do not breastfeed their infants because of the fear that they might lose weight by breastfeeding their baby followed with nature of nursing mothers' job, other reasons are long period of breastfeeding, lack of confidence in breastfeeding and the fear that infant may become addicted to breastfeeding (Tella et al 2008).

In the 2006 study conducted by Salami, it was revealed that in Edo state, Nigeria, 82 per cent of the mothers practiced breastfeeding, 66 per cent supplemented with corn gruel and glucose water, and 14 per cent used herbal brew. Only 20 per cent practiced exclusive breastfeeding.

In Nigeria, despite the fact that most mothers consider breast milk as the best food for infants, reports indicate that the majority do not practice optimal breastfeeding, and exclusive breastfeeding for the first six months of life is still as low as 17% (NDHS, 2003).

The Exclusive Breastfeeding (EBF) rate declined from 64.9% at birth to 37.3% at 24 weeks of age. However, this rate is higher compared to previous values reported for Nigeria and other developing countries (Ukebgu et al, 2010).

EBF rates in Nigeria are amongst the lowest in the world, and even compare poorly with other neighboring countries in the region - Nigeria lags behind Ghana (53.4%), Republic of Benin (43.1%) and Cameroon (23.5%) (Agho et al, 2011).

The association between the times of the first breastfeeding to subsequent breastfeeding establishment has been documented. Earlier initiation of breastfeeding is associated with better breastfeeding outcomes. The range of percentage of infants that were breastfed immediately after birth is between 10% (in Mali) to 44% (in Côte d'Ivoire) in West Africa. Many countries have very low rates of immediate initiation of breastfeeding, although most are breastfed within the first 24 hours. Urban-rural residence, maternal education, and age only slightly affect of breastfeeding initiation. Among survey respondents in rural southwestern Nigeria, 20% of mothers stated that breastfeeding should commence within 30 minutes of delivery while about 10% said 1 or more days after delivery (Wambach et al, 2005).

2.5 Adolescent mothers' ANC and PNC utilization and breastfeeding

In Central Uganda, adolescent mothers were significantly more disadvantaged in terms of health care seeking for maternal and child health services and faced more challenges during pregnancy and early motherhood compared to adult mothers. The majority of adolescent and adult mothers attended ANC at least once, very few (less than 15%) attended at least once within the first three months of pregnancy. The mean number of times adolescent and adult mothers attended ANC were nearly the same (4.1 and 4.3 respectively), and adolescent mothers were 1.5 times more likely to attend less than four ANC visits compared to adult mothers (Lynn et al, 2008)

Negussie et al, 2004 concluded in their study that failure to enroll in school or early dropout by teenage mothers affected obstetric care utilization.

The percentage of mothers who received ANC from a health professional (or care with a health professional (CHP)) or skilled attendants in the 2003 NDHS appears higher among those aged 20-49 years than among those under 20 years (Nwogu, 2009).

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. 43% of the teenage mothers received care from skilled attendants (NDHS, 2008).

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CHAPTER THREE

METHODOLOGY

3.1 Study design.

This is a secondary data analysis of the 2007 National HIV/AIDS and Reproductive Health Survey (NARHS) Plus. The maternal health services utilization and breastfeeding practices of teenage mothers were compared with that of the non teenage mothers.

3.2 Description of the 2007 NARHS

This was a cross-sectional survey. NARHS Plus is a national representative sample of females aged 15-49 years and males aged 15-64 years living in households in rural and urban areas in Nigeria. The main objective of the survey was to obtain accurate HIV prevalence estimates and information on risk factors related to HIV infection at the national, zonal and to some extent at state levels. In addition, it aims to provide information on the situation of reproductive and sexual health in Nigeria, the variety of factors that influence reproductive and sexual health, and to provide data regarding the impact of ongoing Family Planning and HIV/AIDS behavior change interventions, and to yield insights into existing gaps that may require attention. The 2007 NARHS survey included biological component that is HIV testing and thus called "NARHS Plus". NARHS Plus is the third in the series (the first and second conducted in 2003 and 2005 respectively).

The NARHS Plus sample was drawn from the updated master sample frame of rural and urban localities developed and maintained by the National Population Commission (NPC).

The sampling procedure was a (four-level) multi-stage cluster sampling aimed at selecting eligible persons with known probability. Stage 1 involved the selection of rural and urban localities. Stage 2 involved the selection of Enumeration Areas (EA) within the selected rural and urban localities. Stage 3 involved the listing of eligible individuals within households while stage 4 involved selection of actual respondents for interview and testing. Overall, 11,822 respondents were selected for interview of which 11,521 were successfully interviewed resulting in a 2.5% non response rate.

The study area consisted of all the 36 states of the federation and the Federal Capital Territory. The survey captured, among others, the following broad themes: socio-demographic characteristics Sexual behavior, Knowledge and treatment of STIs, Knowledge and perception of HIV/AIDS, Condom accessibility and use Stigma and discrimination, Knowledge about family planning, Attitude and use of family planning, Availability, affordability and accessibility of family planning products, Reproductive rights and violence against women, Awareness of Maternal mortality and vesico-vaginal fistulae and its Causes, Exposure to Health Communication and Knowledge and treatment of Tuberculosis.

3.3 Study Population

The study population for this study is 3,604. It consisted of 240 teenage mothers aged 15-19 and 3,364 non teenage mothers aged 20-49.

3.4 Data

Data of female teenagers aged 15-19 years and non teenage mothers aged 20-49 years was extracted from the 2007 NARHS plus data.

This study used of the following variables; Socio demographic or background characteristics, Exposure to Information about child spacing, child care and breastfeeding, utilization of ANC and PNC and breastfeeding practices such as; Did you ever breastfeed ?, How long after birth did you first put to breast?, how many months did you breastfeed?, How many times did you breastfeed last night between sunset and sunrise and at what age did you first introduce other liquids, semi-solid or solid food apart from breast milk?

3.5 Data analysis.

Analysis was performed using SPSS version 15.0 statistical software. Descriptive statistics (mean, median and standard deviation) was used to summarize the quantitative variable while frequencies and proportions were used for qualitative variables. Test of association was carried

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3.5 Data analysis.

Analysis was performed using SPSS version 15.0 statistical software. Descriptive statistics (mean, median and standard deviation) was used to summarize the quantitative variable while frequencies and proportions were used for qualitative variables. Test of association was carried

out using Chi-square test, which was utilized for cross tabulation to compare the association of the relevant individual characteristics of the teenage and non teenage mothers. Mann-Whitney U test was also used to compare the number of times the teenage and non teenage mothers went on ANC visits and number of times they breastfed between sunrise and sunset.

Multivariate analysis using the logistic regression was carried out. Logistic regression analysis was used to study the influence of the independent variables (the sociodemographic characteristics, health information received and exposure to mass media) on the dependent variable (maternal health care services and breastfeeding) in teenage and non teenage mothers. All significant tests were at 5% level.

3.6 Limitations of the study.

Some known predictors of maternal health service utilization are obviously missing from the analyses. For example, availability of maternal health services within the immediate locality of respondents, the distance of respondents to such health services and birth order could have contributed to the utilization pattern. These variables unfortunately were not available in the NARHS Plus data.

The respondents might not have completely remembered and given accurate answers to the questions asked, hence information bias might be experienced in the respondents. The variables used for this study were restricted to those retrieved from NARHS Plus data.

CHAPTER FOUR

RESULTS

4.1 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Table 1 below shows the percentage distribution of the mothers according to their socio-demographic characteristics.

The mean age of the teenage mothers and non teenage mothers were 17.6 (SD=1.2) and 32 (SD=7.9) respectively.

There were 240 teenage mothers (TM) compared with 3364 non-teenage mothers (NTM) in this study.

A significantly higher proportion (80.4%) of TM were compared to 67.9% NTM were from rural areas ($p<0.001$). concerning geographical zone, 47.1% of teenage mothers compared to 26.8% of non teenage mothers were from the North West ($p<0.001$). About two-third (75.4%) of the TM and over half (53.3%) of the NTM are Muslims by religion. The difference is significant ($p<0.001$). Also more than half 58.8% of the TM compared to 50.6% of the NTM had primary or lower level of education. The result was not significant ($p=0.072$).

Majority, 97.7% of the NTM compared to 88.1% TM were currently married at the time of study. The result was significant ($p<0.001$).

Table 1: Comparison of the background characteristics of the respondents

Characteristics	Teenage mothers	Non teenage mothers	χ^2	P-Value
LOCATION			16.41	<0.001
Urban	47 (19.6%)	1081 (32.1%)		
Rural	193 (80.4%)	2283 (67.9%)		
TOTAL.	240 (100.0%)	3364(100.0%)		
ZONE			61.67	<0.001
North West	113(47.1%)	903(26.8%)		
North East	36(15.00%)	480(14.3%)		
North Central	42(17.5%)	591(17.6%)		
South West	11(4.6%)	569(16.9%)		
South East	11(4.6%)	317(9.4%)		
South South	27(11.3%)	504(15%)		
TOTAL.	240(100.0%)	3364(100.0%)		
RELIGION			44.10	<0.001
Islam	181(75.4%)	1778(53.3%)		
Christianity	59(24.6%)	1556(46.7%)		
TOTAL	240(100.0%)	3334(100.0%)		
LEVEL OF EDUCATION			3.29	0.072
Primary or lower.	77(58.8%)	1067(50.6%)		
Secondary or higher.	54(41.2%)	1041(49.4%)		
TOTAL	131(100.0%)	2108(100.0%)		
MARITAL STATUS			68.25	<0.001
Currently married	200(88.1%)	2891(97.7%)		
Never married	27(11.9%)	67(11.9%)		
TOTAL	227(100.0%)	2958(100.0%)		

4.2 RESPONDENTS' ANC UTILIZATION.

The chi-square and p-value from bivariate analysis of ANC utilization between the TM and NTM are shown in the table below.

Table 2 reveals that the proportion of teenage mothers who received ANC was 51.5% while 63.8% of the non teenage mothers did. The result was significant $p < 0.001$.

Table 2: Bivariate analysis of respondents with maternal health care service (ANC) utilization

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
RECEIVED ANTENATAL CARE			14.15	<0.001
Yes.	122(51.5%)	1582(63.8%)		
No.	115(48.5%)	896(36.2%)		
TOTAL.	237(100.0%)	2478(100.0%)		

4.2.1: LOGISTIC REGRESSION OF ANC UTILIZATION ON TEENAGE PREGNANCY

ADJUSTING FOR SOCIODEMOGRAPHIC CHARACTERISTICS

The odds ratio and confidence intervals from logistic regression of ANC on variables are shown in table 3.

Teenage mothers were about two times less likely to receive ANC than the non teenage mothers. The result was not significant. (OR=0.89, 95%CI=0.66-1.20).

Teenage mothers who reside in the South Eastern zone were about five times more likely to utilize ANC than the non teenage mothers residing in same area. The result was significant.

(OR=4.16, 95%CI=2.49-6.95). Generally teenage mothers residing in all the regions were more likely to utilize ANC; all the results were significant except for the north western region.

Urban dwellings TM were about four times more likely to utilize ANC compared to the NTM. (OR=3.68, 95%CI=2.93-4.61). TM that are Muslims by religion were about three times less likely than the NTM to receive ANC (OR=0.39, 95%CI=0.29-0.52).

Teenage mother' marital status was not significantly associated with their ANC utilization.

Table 3: The logistic regression analysis result of maternal health care utilization (antenatal care) between the teenage and the non teenage mothers

CHARACTERISTICS	ODDS RATIO	95% CI	P-VALUE
Teenage mothers	0.89	0.66-1.20	0.451
Non teenage mothers (ref)	1.00		
ZONE			
North-West	1.14	0.77-1.69	0.523
North-East	2.08	1.38-3.12	<0.001
North-Central	2.41	1.65-3.52	<0.001
South-West	3.21	2.13-4.83	<0.001
South-East	4.16	2.49-6.95	<0.001
South-South (ref)	1.00		
LOCATION			
Urban.	3.68	2.93-4.61	<0.001
Rural (ref).	1.00		
RELIGION			
Islam	0.39	0.29-0.52	<0.001
Christianity (ref).	1.00		
MARITAL STATUS			
Currently married.	1.38	0.80-2.63	0.248
Never married (ref).	1.00		

4.2.2 COMPARISON OF THE NUMBER OF TIMES RESPONDENTS WENT TO CLINIC ON ANC VISITS USING THE MANN-WHITNEY U TEST.

The median time the teenage mothers received antenatal care (5.00, SD=4.18) was less compared to the non teenage mothers (6.00, SD=6.74). The relationship was significant ($p < 0.001$).

Table 4: Comparison of respondent's standard deviation, range and median time ANC was received.

VARIABLE	MEDIAN TIME.	SD	RANGE	Z SCORE	P-VALUE
Teenage mothers.	5.00	4.18	20.00	3.40	<0.001
Non teenage mothers.	6.00	6.74	81.00		

4.2.3 THE COMPARISON OF THE RESPONDENTS AND THE POSSIBILITY OF BEING ATTENDED TO BY A DOCTOR DURING ANC VISITS.

Table 5 reveals the cross tabulation result of the mothers with the skilled attendant seen during ANC visits. The proportion (17%) of non teenage mothers who were seen by a doctor during ANC visits was higher compared to 6.3% of the teenage mothers. This result was significant at $p < 0.001$.

Table 5: Bivariate analysis of respondents with the type of skilled attendant seen during ANC visits.

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
Seen by a Doctor			18.20	<0.001
YES	15(6.3%)	416(17.0%)		
NO	222(93.7%)	2034(83.0%)		
TOTAL	237(100.0%)	2450(100.0%)		

4.2.4 THE COMPARISON OF THE RESPONDENTS AND THE POSSIBILITY OF BEING ATTENDED TO BY A NURSE DURING ANC VISITS.

Table 6 shows the chi square and p-value of skilled attendant seen by TM compared to NTM during ANC visits. More (42.6%) of non teenage mothers compared to 26.6% of teenage mothers were seen by a nurse during ANC visits ($p < 0.001$).

Table 6: Bivariate analysis of respondents with the type of skilled attendant seen during ANC visits.

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
Seen by a Nurse			22.92	<0.001
YES	63(26.6%)	1044(42.6%)		
NO	174(73.4%)	1406(57.4%)		
TOTAL	237(100.0%)	2450(100.0%)		

4.3 RESPONDENTS' PNC UTILIZATION.

The comparison of TM and NTM's PNC utilization and the type of clinics it was obtained are shown in tables 7, 9 and 10.

Though a lower proportion of both the teenage and non teenage mothers went for PNC, 21.9% of TM compared to 42.7% of the NTM received PNC ($p < 0.001$).

Table 7: Bivariate analysis of respondents with maternal health care service (PNC) utilization.

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
Received PNC			38.55	<0.001
YES	52(21.9%)	1058(42.7%)		
NO	185(78.1%)	1420(57.3%)		
TOTAL	237(100.0%)	2487(100.0%)		

4.3.1: LOGISTIC REGRESSION OF PNC UTILIZATION ON TEENAGE PREGNANCY

ADJUSTING FOR SOCIODEMOGRAPHIC CHARACTERISTICS

The odds ratios and confidence intervals from logistic regression of PNC utilization on variables are shown in table 8. Teenage mothers were about two times less likely to obtain PNC than the non teenage mothers. The result was significant. (OR=0.56, 95%CI=0.39-0.79).

Teenage mothers who reside in the zones were about two times more likely to utilize PNC than the non teenage mothers residing in all zones except those residing in the north western region who were two times less likely than those in South South zone. The results were significant.

Urban dwelling TM about three times more likely to obtain PNC compared to the NTM. (OR=2.90, 95%CI=2.40-3.52). TM that are Muslims by religion were about three times less likely than the NTM to receive ANC (OR=0.47, 95%CI=0.37-0.60).

The currently married teenage mothers were about two times more likely to obtain PNC than non teenage mothers who were never married (OR=1.38, 95%CI=0.82-2.32).

Table 8: The logistic regression analysis result of maternal health care utilization

(Postnatal care) between the teenage and the non teenage mothers.

Characteristics	Odds ratio	95% CI	P-value
Teenage mothers	0.56	0.39-0.79	0.001
Non teenage mothers (ref)	1.00		
ZONE			
North-West	0.62	0.43-0.90	0.012
North-East	1.52	1.05-2.21	0.028
North-Central	1.68	1.20-2.37	0.003
South-West	1.74	1.23-2.45	0.002
South-East	1.55	1.06-2.28	0.024
South-South (ref)	1.00		
LOCATION			
Urban.	2.90	2.40-3.52	<0.001
Rural (ref).	1.00		
RELIGION			
Islam	0.47	0.37-0.60	<0.001
Christianity(ref)	1.00		
MARITAL STATUS			
Currently married.	1.38	0.82-2.32	0.229
Never married (ref).	1.00		

4.3.2 COMPARISON OF RESPONDENTS WHO OBTAINED PNC FROM GOVERNMENT HOSPITALS.

In table 9, a higher proportion (76.9%) of the teenage mothers went to government clinics for PNC compared to 72.4% of non teenage mothers. The result was not significant ($p=0.479$).

Table 9: Bivariate analysis of respondents with the type of clinic PNC was received.

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
Received PNC from a government hospital.			0.50	0.479
YES	40(76.9%)	749(72.4%)		
NO	12(23.1%)	285(27.6%)		
TOTAL	52(100.0%)	1034(100.0%)		

4.3.3 COMPARISON OF RESPONDENTS WHO OBTAINED PNC FROM PRIVATE HOSPITALS.

A higher percentage (21.2%) of the non teenage mothers received PNC from private clinics compared to 13.5% of teenage mothers who did. The result was insignificant.

Table 10: Bivariate analysis of respondents with the type of clinic PNC was received.

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
Received PNC from a private hospital.			0.181	1.79
YES	7(13.5%)	219(21.2%)		
NO	45(86.5%)	815(78.8%)		
TOTAL	52(100.0%)	1034(100.0%)		

4.4 COMPARISON OF BREASTFEEDING PRACTICES BETWEEN TEENAGE AND NON TEENAGE MOTHERS

The breastfeeding practices of the TM and NTM were also compared and the findings are presented in tables 11, 12, 13, 14 and 15

Surprisingly, the table (11) below shows that more (95.4%) of the TM breastfed their babies compared to 94.9% of the NTM. The result was not significant ($p=0.746$)

Table 11: Bivariate analysis of respondents with breastfeeding.

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
EVER BREASTFED?			0.105	0.746
YES	226(95.4%)	2351(94.9%)		
NO	11(4.6%)	127(5.1%)		
TOTAL	237(100.0%)	2487(100.0%)		

4.4.1: COMPARISON OF EXCLUSIVE BREASTFEEDING BETWEEN TEENAGE AND NON TEENAGE MOTHERS.

Table 12 below reveals a higher proportion (40.8%) of teenage mothers exclusively breastfed their child compared to 36.7% of non teenage mothers who practiced exclusive breastfeeding. The result was not significant ($p=0.330$).

Table 12: Bivariate analysis of respondents with breastfeeding practices (exclusive breastfeeding).

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
PRACTICED EXCLUSIVE BREASTFEEDING			0.95	0.330
Yes	64(40.8%)	389(36.7%)		
No	93(59.2%)	670(63.3%)		
TOTAL	157(100.0%)	1059(100.0%)		

4.4.2 COMPARISON OF NUMBER OF TIMES CHILD WAS BREASTFED BETWEEN TEENAGE AND NON TEENAGE MOTHERS USING THE MANN-WHITNEY U TEST.

The median time the teenage mothers breastfed between sunrise and sunset was same compared to the non teenage mothers (5.00, SD=3.88). The difference is not significant (p=0.228).

Table 13: Comparison of respondents' median, range and standard deviation of time child was breastfed between sunrise and sunset.

VARIABLE	MEDIAN TIME	SD	RANGE	Z SCORE	P-VALUE
Teenage mothers.	5.00	3.11	16.00	1.21	0.228
Non teenage mothers.	5.00	3.88	24.00		

4.4.3 COMPARISON OF RESPONDENTS' DURATION OF TIME IT TOOK TO BREASTFEED CHILD AFTER BIRTH

According to the table below, majority (45.8%) of teenage mothers breastfed immediately after birth compared to 44.5% of non teenage mothers who also breastfed immediately after birth too. The result was not significant.

Table 14: Bivariate analysis of respondents with breastfeeding practices (duration of time it took to breastfeed child after birth).

Variables	Teenage mothers	Non teenage mothers	χ^2	p-value
How long it took to breastfeed after birth?			0.14	0.932
Immediately	103(45.8%)	1030(44.5%)		
Hours later	94(41.8%)	983(42.5%)		
Days later	28(12.4%)	300(13.0%)		
TOTAL	225(100.0%)	2313(100.0)		

4.4.4 COMPARISON OF AGE WHEN CHILD WAS WEANED BETWEEN THE TEENAGE AND NON TEENAGE MOTHERS

In the table below, higher proportion (53.3%) of the teenage mothers weaned their child when the child was either at most twelve months of age compared to 56.7% non teenage mothers who weaned between a year and two.

Table 15: Bivariate analysis of respondents with breastfeeding practices (weaning of the child).

VARIABLES	TEENAGE MOTHERS	NON TEENAGE MOTHERS	χ^2	P-VALUE
WHEN CHILD WAS WEANED			0.57	0.450
0-12months	8(53.3%)	94(43.3%)		
13-24months	7(46.7%)	123(56.7%)		
TOTAL	15(100.0%)	217(100.0%)		

4.5 PREDICTORS OF ANC UTILIZATION AMONG THE TEENAGE MOTHERS

The table below shows the result for the predictors of ANC utilization among teenage mothers. Higher proportion (76.6%) of the teenage mothers residing in the urban area received ANC. More (77.8%) of the teenage mothers with secondary or higher level of education utilized ANC compared with those who have primary level of education who did. The teenage mothers who were never married received ANC compared with the currently married ones. Teenage mothers who are Christians utilized ANC than the teenage mothers who are Muslims.

The sociodemographic predictors of ANC utilization by teenage mothers are location ($p < 0.001$), level of education ($p = 0.014$) and religion ($p = 0.004$), all these were found to be significant, also the teenage mothers' radio listening ($p = 0.002$) and television viewing habit ($p = 0.017$) were significant while the health information they received on child spacing and family planning ($p = 0.857$), zone and marital status ($p = 0.089$) were not significant.

Table 16: Bivariate analysis of Predictors of ANC utilization among the teenage mothers.

FACTORS	RECEIVED ANC		TOTAL	χ^2	P-VALUE
	YES	NO			
LOCATION				14.81	<0.001
Urban	36(76.6%)	11(23.4%)	47(100.0%)		
Rural	86(45.3%)	104(54.7%)	190(100.0%)		
ZONE				9.66	0.086
North West	47(42.3%)	64(57.7%)	111(100.0%)		
North East	22(61.1%)	14(38.9%)	36(100.0%)		
North Central	21(51.2%)	20(48.8%)	41(100.0%)		
South West	10(90.9%)	1(9.1%)	11(100.0%)		
South East	9(81.8%)	2(18.2%)	11(100.0%)		
South South	13(48.1%)	14(51.9%)	27(100.0%)		
RELIGION				6.06	0.014
Islam	84(46.9%)	95(53.1%)	179(100.0%)		
Christianity	38(65.5%)	20(34.5%)	58(100.0%)		
LEVEL OF EDUCATION				8.23	0.004
Primary or lower.	41(53.2%)	36(46.8%)	77(100.0%)		
Secondary or higher.	42(77.8%)	12(22.2%)	54(100.0%)		
MARITAL STATUS				2.89	0.089
Currently married	98(49.2%)	101(50.8%)	199(100.0%)		
Never married	18(66.7%)	9(33.3%)	27(100.0%)		

RECEIVED INFORMATION ON CHILDSPACING/FP				0.03	0.857
Yes	26(83.9%)	5(16.1%)	31(100.0%)		
No	18(85.7%)	3(14.3%)	21(100.0%)		
RADIO LISTENING HABIT.				12.09	0.002
Every day or almost every day.	34(68.0%)	16(32.0%)	50(100.0%)		
Less than or once a week.	54(52.4%)	49(47.6%)	103(100.0%)		
Not at all.	27(36.5%)	47(63.5%)	74(100.0%)		
TELEVISION WATCHING HABIT.				8.16	0.086
Every day or almost every day.	16(66.7%)	8(33.3%)	24(100.0%)		
Less than or once a week.	36(63.2%)	21(36.8%)	57(100.0%)		
Not at all.	65(44.5%)	81(55.5%)	146(100.0%)		

4.5.1 PREDICTORS OF ANC UTILIZATION AMONG TEENAGE MOTHERS FROM LOGISTIC REGRESSION ANALYSIS.

The odds ratio and confidence intervals from logistic regression of predictors of TM ANC utilization on variables are shown in the table below.

Teenage mothers in the urban areas are about four times more likely to utilize ANC than those in the rural areas. Location of the teenage mothers is a factor predicting their ANC utilization (OR=3.52, 95%CI=1.22-10.21).

The teenage mothers who received ANC are about five times less likely to have had primary or lower level of education than those with secondary or higher educational attainment.(OR=0.24, 95%CI=0.08-0.73).

Teenage mothers who are Muslims by religion are two times more likely to utilize ANC than their Christian counterparts (OR=2.00, 95%CI=0.68-5.83). Religion is not a predictor of ANC utilization among teenage mothers.

Those of them who listen to radio daily are about three times more likely to utilize ANC than those who do not listen at all. (OR=2.60, 95%CI=0.77-8.81) while those who listen less than once a week are two times more likely to utilize ANC than those who don't listen at all (OR=2.00, 95%CI=0.65-6.13).

The teenage mothers who view TV every day are about three times less likely to utilize ANC than those who do not view TV at all (OR=0.35, 95%CI=0.09-1.40). Those who view TV less than once a week are about two times less likely to utilize ANC (OR=0.85, 95%CI=0.31-2.30).

Table 17: The logistic regression analysis result of predictors of ANC utilization among teenage mothers.

Factors	Odds ratio	95% CI	P-value
LOCATION			
Urban.	3.52	1.22-10.21	0.020
Rural (ref)	1.00		
EDUCATION			
Primary or Lower.	0.24	0.08-0.73	0.012
Secondary or Higher (ref).	1.00		
RELIGION			
Islam	2.00	0.68-5.83	0.208
Christianity (ref)	1.00		
RADIO LISTENING HABIT.			
Every day or almost every day.	2.60	0.77-8.81	0.124
Less than or once a week.	2.00	0.65-6.13	0.225
Not at all (ref).	1.00		
TELEVISION WATCHING HABIT.			
Every day or almost every day.	0.35	0.09-1.40	0.138
Less than or once a week.	0.85	0.31-2.30	0.741
Not at all (ref).	1.00		

4.5.2 PREDICTORS OF PNC UTILIZATION AMONG THE TEENAGE MOTHERS

In the Table below, 36.2% of teenage mothers who are urban dwellers went for PNC compared with 18.4% of teenage mothers who are rural dwellers, the result was significant at $p=0.008$.

Of all the geopolitical zones, the proportion of the teenage mothers from the South-Western zone who received PNC was the highest (54.5%). Zone is significantly associated with PNC utilization ($p<0.001$).

Higher proportion (41.4%) of Christian teenage mothers received PNC more than the teenage mothers who are Muslims. Religion is a predictor of PNC utilization among teenage mothers. This is significant at $p<0.001$.

The level of education of the teenage mothers is another predictor of PNC utilization. Teenage mothers with secondary level of education utilized PNC compared with those of them who had lower level of education. Their radio listening and television viewing habit were significant at $p=0.005$ and 0.024 respectively. Marital status of the teenage mothers is not a predictor of PNC utilization ($p=0.055$).

Table 18: Predictors of PNC utilization among the teenage mothers.

FACTORS	RECEIVED PNC		TOTAL	χ^2	P-VALUE
	YES	NO			
LOCATION				6.93	0.008
Urban	17(36.2%)	30(63.8%)	47(100.0%)		
Rural	35(18.4%)	155(81.6%)	190(100.0%)		
ZONE				24.91	<0.001
North West	11(9.9%)	100(90.1%)	111(100.0%)		
North East	11(30.6%)	25(69.4%)	36(100.0%)		
North Central	9(22.0%)	32(78.0%)	41(100.0%)		
South West	6(54.5%)	5(45.5%)	11(100.0%)		
South East	5(45.5%)	6(54.5%)	11(100.0%)		
South South	10(37.0%)	17(63.0%)	27(100.0%)		
RELIGION				16.94	<0.001
Islam	28(15.6%)	151(84.4%)	179(100.0%)		
Christianity	24(41.4%)	34(58.6%)	58(100.0%)		
LEVEL OF EDUCATION				14.77	<0.001
Primary or lower.	12(15.6%)	65(84.4%)	77(100.0%)		
Secondary or higher.	25(46.3%)	29(53.7%)	54(100.0%)		

MARITAL STATUS				3.68	0.055
Currently married	41(20.6%)	158(79.4%)	199(100.0%)		
Never married	10(37.0%)	17(63.0%)	27(100.0%)		
RADIO LISTENING HABIT.				10.71	0.005
Every day or almost every day.	19(38.0%)	31(62.0%)	50(100.0%)		
Less than or once a week.	21(20.4%)	82(79.6%)	103(100.0%)		
Not at all.	10(13.5%)	64(86.5%)	74(100.0%)		
TELEVISION WATCHING HABIT.				7.47	0.024
Every day or almost every day.	8(33.3%)	16(66.7%)	24(100.0%)		
Less than or once a week.	18(31.6%)	39(68.4%)	57(100.0%)		
Not at all.	24(16.4%)	122(83.6%)	146(100.0%)		

4.5.3 PREDICTORS OF PNC UTILIZATION AMONG NIGERIAN TEENAGE MOTHERS FROM LOGISTIC REGRESSION ANALYSIS.

The odds ratio and confidence intervals from logistic regression of predictors of TM PNC utilization on variables are shown in the table below.

The teenage mothers with primary or lower level of education are four times less likely to utilize PNC than those of them with secondary or higher level of education. Education is the only predictor of PNC utilization among the teenage mothers (OR=0.25, 95%CI=0.08-0.76).

Zone, location and religion were not significant, therefore they not predictors of PNC utilization among the teenage mothers.

Those of them who listen to radio daily are about four times more likely to utilize ANC than those who do not listen at all. (OR=3.38, 95%CI=0.80-17.93) while those who listen less than once a week are two times more likely to utilize PNC than those who don't listen at all (OR=1.21, 95%CI=0.27-5.47).

The teenage mothers who view TV every day are about three times less likely to utilize PNC than those who do not view TV at all (OR=0.38, 95%CI=0.08-1.81). Those who view TV less than once a week are about two times more likely to utilize PNC than those who don't at all (OR=1.29, 95%CI=0.43-3.91).

Table 19: The logistic regression analysis result of predictors of PNC utilization among teenage mothers.

Factors	Odds ratio	95% CI	P-value
ZONE			
North-West	0.30	0.05-1.82	0.187
North-East	0.92	0.20-4.23	0.916
North-Central	0.71	0.13-3.97	0.698
South-West	2.41	0.45-12.94	0.306
South-East	2.17	0.46-10.11	0.325
South-South (ref)	1.00		
LOCATION			
Urban.	0.83	0.30-2.30	0.721
Rural (ref)	1.00		
EDUCATION			
Primary or Lower.	0.25	0.08-0.76	0.014
Secondary or Higher (ref).	1.00		
RELIGION			
Islam	2.07	0.42-10.17	0.372
Christianity (ref)	1.00		
RADIO LISTENING HABIT.			
Every day or almost every day.	3.38	0.80-17.93	0.094
Less than or once a week.	1.21	0.27-5.47	0.808
Not at all (ref).	1.00		
TELEVISION WATCHING HABIT.			
Every day or almost every day.	0.38	0.08-1.81	0.224
Less than or once a week.	1.29	0.43-3.91	0.654
Not at all (ref).	1.00		

4.5.4 PREDICTORS OF BREASTFEEDING AMONG THE TEENAGE MOTHERS

In table 20, none of the variables were predictors of breastfeeding among teenage mothers. Location ($p=0.526$), zone ($p=0.086$), religion ($p=0.224$), marital status ($p=0.765$) and their level of exposure to mass media ($p=0.578$ and 0.379) were all not significant.

Table 20: Predictors of breastfeeding among the teenage mothers.

FACTORS	EVER BREASRFED		TOTAL	χ^2	P-VALUE
	YES	NO			
LOCATION				0.40	0.526
Urban	44(93.6%)	3(6.4%)	47(100.0%)		
Rural	182(95.8%)	8(4.2%)	190(100.0%)		
ZONE				9.66	0.086
North West	101(91.0%)	10(9.0%)	111(100.0%)		
North East	36(100.0%)	0(0%)	36(100.0%)		
North Central	41(100.0%)	0(0%)	41(100.0%)		
South West	11(100.0%)	0(0%)	11(100.0%)		
South East	11(100.0%)	0(0%)	11(100.0%)		
South South	26(96.3%)	1(3.7%)	27(100.0%)		
RELIGION				1.48	0.224
Islam	169(94.4%)	10(5.6%)	179(100.0%)		
Christianity	57(98.3%)	1(1.7%)	58(100.0%)		

LEVEL OF EDUCATION				0.82	0.365
Primary or lower.	76(98.7%)	1(1.3%)	77(100.0%)		
Secondary or higher.	52(96.3%)	2(3.7%)	54(100.0%)		
MARITAL STATUS				0.09	0.765
Currently married	189(95.0%)	10(5.0%)	199(100.0%)		
Never married	26(96.3%)	1(3.7%)	27(100.0%)		
RADIO LISTENING HABIT.				1.10	0.578
Every day or almost every day.	47(94.0%)	3(6.0%)	50(100.0%)		
Less than or once a week.	97(94.2%)	6(5.8%)	103(100.0%)		
Not at all.	72(97.3%)	2(2.7%)	74(100.0%)		
TELEVISION WATCHING HABIT.				1.94	0.379
Every day or almost every day.	22(91.7%)	2(8.3%)	24(100.0%)		
Less than or once a week.	56(98.2%)	1(1.8%)	57(100.0%)		
Not at all.	138(94.5%)	8(5.5%)	146(100.0%)		

4.6 PREDICTORS OF ANC AMONG THE NON TEENAGE MOTHERS IN NIGERIA

Table 21 reveals that 82.8% of the non teenage mothers who are urban dwellers received ANC compared with about 55% of the rural dwellers who did. There exist a significant difference between location and ANC utilization by the non teenage mothers; hence location is a predictor of ANC utilization among the non teenage mothers.

The NTM who reside in the southern region of the country received ANC more, compared with their colleagues in the Northern part. The highest proportion (86.1%) of them who received ANC was in the South-Eastern zone. This result was significant at $p < 0.001$.

Higher proportion (77.1%) of the non teenage mothers who received ANC were Christians compared with 54.2% of the Muslims NTM who did. Religion has significant association with ANC utilization ($p < 0.001$).

Level of education is also a predictor of ANC utilization of the NTM. Those with secondary or higher level of education received ANC more compared to those with primary or lower level of education. This was significant, $p < 0.001$.

Marital status was not significantly associated the non teenage mothers' ANC utilization ($p = 0.693$). Therefore, it is not a predictor of ANC utilization.

A high percentage 93.1% of them received information about child spacing/family planning. Relationship exists between this and use of ANC by the non teenage mothers. $P = 0.005$.

Among NTM who received ANC, 75% listen to the radio and 85.4% view the television every day. These were both significant at $p < 0.001$.

Table 21: Bivariate analysis of the Predictors of ANC among non teenage mothers.

FACTORS	RECEIVED ANC		TOTAL	χ^2	P-VALUE
	YES	NO			
LOCATION				180.44	<0.001
Urban	652(82.8%)	135(17.2)	787(100.0%)		
Rural	930(55.0%)	761(45.0)	1691(100.0)		
ZONE				232.02	<0.001
North West	319(44.9%)	392(55.1%)	711(100.0%)		
North East	228(60.2%)	151(39.8%)	379(100.0%)		
North Central	309(69.4%)	136(30.6%)	445(100.0%)		
South West	328(84.1%)	62(15.9%)	390(100.0%)		
South East	174(86.1%)	28(13.9%)	202(100.0%)		
South South	224(63.8%)	127(36.2%)	351(100.0%)		
RELIGION				136.76	<0.001
Islam	756(54.2%)	638(45.8%)	1394(100.0%)		
Christianity	820(77.1%)	244(22.9%)	1064(100.0%)		
LEVEL OF EDUCATION				41.95	<0.001
Primary or lower.	554(70.0%)	235(29.8%)	789(100.0%)		
Secondary or higher.	683(83.8%)	132(16.2%)	815(100.0%)		
MARITAL STATUS				0.156	0.693
Currently married	1414(63.7%)	806(36.3%)	2220(100.0%)		
Never married	28(60.9%)	18(39.1%)	46(100.0%)		

RECEIVED INFORMATION ON CHILDSPACING				7.85	0.005
Yes	715(93.1%)	53(6.9%)	768(100.0%)		
No	233(87.6%)	33(12.4%)	266(100.0%)		
RADIO LISTENING HABIT.				153.14	<0.001
Every day or almost every day.	576(79.0%)	153(21.0%)	729(100.0%)		
Less than or once a week.	687(64.0%)	386(36.0%)	1073(100.0%)		
Not at all.	297(46.8%)	338(53.2%)	635(100.0%)		
TELEVISION WATCHING HABIT.				240.86	<0.001
Every day or almost every day.	405(85.4%)	69(14.6%)	474(100.0%)		
Less than or once a week.	547(74.6%)	186(25.4%)	733(100.0%)		
Not at all.	591(49.5%)	604(50.5%)	1195(100.0%)		

4.6.1 PREDICTORS OF ANC AMONG NON TEENAGE MOTHERS FROM LOGISTIC REGRESSION ANALYSIS.

The odds ratio and confidence intervals from logistic regression of predictors of NTM ANC utilization on variables are shown in table 22.

Non teenage mothers in the North Eastern, North Central and South Western part of the country are about four times more likely than those in the North Western region are about three times more likely while those in the South Eastern part are about five times more likely to utilize ANC than those in the South southern part. Zone was found to be significant with ANC utilization by non teenage mothers.

Urban dwelling non teenage mothers are about three times more likely than those dwelling in the rural areas to receive ANC. (OR=2.58, 95%CI=1.94-3.42).

Non teenage mothers with lower level of education are about two times more likely than those with higher level of education to receive ANC. Education is a predictor of ANC utilization by non teenage mothers (OR=0.57, 95%CI=0.43-0.75).

Religion is not a predictor of ANC utilization by non teenage mothers.

Those of them who listen to radio daily are about two times less likely to utilize ANC than those who do not listen at all (OR=0.73, 95%CI=0.29-1.80) while those who listen less than once a week are two times less likely to utilize ANC than those who don't listen at all (OR=0.80, 95%CI=0.35-1.88).

The non teenage mothers who view TV every day are about two times more likely to utilize ANC than those who do not view TV at all (OR=1.75, 95%CI=0.77-4.00). Those who view TV less than once a week are about two times more likely to utilize ANC (OR=1.53, 95%CI=0.75-3.13).

Table 22: The logistic regression analysis result of predictors of ANC utilization among non teenage mothers.

FACTORS	ODDS RATIO	95% CI	P-VALUE
ZONE			
North-West	1.42	0.87-2.32	0.157
North-East	3.92	2.26-6.82	0.001
North-Central	3.76	2.35-6.02	<0.001
South-West	3.25	2.11-5.01	<0.001
South-East	4.13	2.45-6.97	<0.001
South-South (ref)	1.00		
LOCATION			
Urban.	2.58	1.94-3.42	<0.001
Rural (ref)	1.00		
EDUCATION			
Primary or Lower.	0.57	0.43-0.75	<0.001
Secondary or Higher (ref).	1.00		
RELIGION			
Islam	0.74	0.51-1.09	0.124
Christianity (ref)	1.00		
RADIO LISTENING HABIT.			
Every day or almost every day.	0.73	0.29-1.80	0.492
Less than or once a week.	0.80	0.35-1.88	0.615
Not at all (ref).	1.00		
TELEVISION WATCHING HABIT.			
Every day or almost every day.	1.75	0.77-4.00	0.185
Less than or once a week.	1.53	0.75-3.13	0.244
Not at all (ref).	1.00		

4.6.2 THE PREDICTORS OF PNC AMONG NON TEENAGE MOTHERS

Table 23 shows the factors predicting non teenage mothers' PNC utilization

PNC was utilized more by the urban NTM (61.1%) compared with those that are rural dwellers (34.1%). This was significant ($p < 0.001$).

NTM from the south Western zone (60.0%) utilized PNC more compared to those from the other zones. This was also significant at $p < 0.001$.

Religion is one of the factors predicting the utilization of PNC by the non teenage mothers. More (55.5%) of them who did received PNC were Christians compared with the Muslim NTM.

Majority (64.2%) of the NTM that utilized PNC had secondary or higher level of education. Education is significantly associated with PNC utilization at $p < 0.001$.

The marital status of the NTM is not a factor predicting PNC utilization by the non teenage mothers ($P = 0.619$).

A higher proportion 56.8% of the NTM who received PNC listens to radio every day ($p < 0.001$) and 68.1% of them views the television daily ($p = 0.001$).

Table 23: Predictors of PNC utilization among the non teenage mothers.

FACTORS	RECEIVED PNC		TOTAL	χ^2	P-VALUE
	YES	NO			
LOCATION				159.98	<0.001
Urban	481(61.1%)	306(38.9%)	787(100.0%)		
Rural	577(34.1%)	1114(65.9%)	1691(100.0%)		
ZONE				193.20	<0.001
North West	164(23.1%)	547(76.9)	711(100.0%)		
North East	156(41.2%)	223(58.8%)	379(100.0%)		
North Central	222(49.9%)	223(50.1%)	445(100.0%)		
South West	234(60.0%)	156(40.0%)	390(100.0%)		
South East	119(58.9%)	83(41.1%)	202(100.0%)		
South South	163(46.4%)	188(53.6%)	351(100.0%)		
RELIGION				122.67	<0.001
Islam	462(33.1%)	932(66.9%)	1394(100.0%)		
Christianity	590(55.5%)	474(44.5%)	1064(100.0%)		
LEVEL OF EDUCATION				61.85	<0.001
Primary or lower.	352(44.6%)	437(55.4%)	789(100.0%)		
Secondary or higher.	523(64.2%)	292(35.8%)	815(100.0%)		
MARITAL STATUS				0.247	0.619
Currently married	950(42.8%)	1270(57.2%)	2220(100.0%)		
Never married	18(39.1%)	28(60.9%)	46(100.0%)		
RADIO LISTENING HABIT.				123.66	<0.001

Every day or almost every day.	141(56.8%)	315(43.2%)	729(100.0%)		
Less than or once a week.	457(42.6%)	616(57.4%)	1073(100.0%)		
Not at all.	171(26.9%)	464(73.1%)	635(100.0%)		
TELEVISION WATCHING HABIT.				250.87	0.001
Every day or almost every day.	323(68.1%)	151(31.9%)	474(100.0%)		
Less than or once a week.	372(50.8%)	361(49.2%)	733(100.0%)		
Not at all.	334(27.9%)	861(72.1%)	1195(100.0%)		

4.6.3 THE PREDICTORS OF NON TEENAGE MOTHERS PNC UTILIZATION FROM LOGISTIC REGRESSION ANALYSIS.

The odds ratio and confidence intervals from logistic regression of predictors of NTM PNC utilization on variables are shown in the table below.

According to the table below, non teenage mothers in all the region aside the North western region were either about two or three times more likely to utilize PNC than those in the South Southern region and these results were significant except for that of the North Western region.

Those of them residing in the urban areas are about two times more likely to utilize PNC than those in rural areas (OR=1.98, 95%CI=1.58-2.46).

The non teenage mothers with lower level of education utilized PNC about two times less likely than those with higher level of education (OR=0.94, 95%CI=0.43-0.68).

Religion is not a predictor of PNC utilization by the non teenage mothers.

NTM who listen to radio daily are about two times more likely to utilize ANC than those who do not listen at all. (OR=1.35, 95%CI=0.95-1.92) while those who listen less than once a week are two times more likely to utilize PNC than those who don't listen at all (OR=1.20, 95%CI=0.88-1.65).

The non teenage mothers who view TV every day are about two times more likely to utilize PNC than those who do not view TV at all (OR=1.95, 95%CI=1.37-2.78). Those who view TV less than once a week are also about two times more likely to utilize PNC than those who don't at all (OR=1.36, 95%CI=1.02-1.81). Television viewing habit of the NTM is a predictor of PNC utilization.

Table 24: The logistic regression analysis result of predictors of PNC utilization among non teenage mothers.

FACTORS	ODDS RATIO	95% CI	P-VALUE
ZONE			
North-West	0.85	0.56-1.28	0.431
North-East	2.24	1.44-3.48	<0.001
North-Central	2.54	1.73-3.72	<0.001
South-West	1.63	1.16-2.29	0.005
South-East	1.49	1.02-2.18	0.040
South-South (ref)	1.00		
LOCATION			
Urban.	1.98	1.58-2.46	<0.001
Rural (ref)	1.00		
EDUCATION			
Primary or Lower.	0.54	0.43-0.68	<0.001
Secondary or Higher (ref)	1.00		
RELIGION			
Islam	0.78	0.59-1.05	0.100
Christianity (ref)	1.00		
RADIO LISTENING HABIT.			
Every day or almost every day.	1.35	0.95-1.92	0.095
Less than or once a week.	1.20	0.88-1.65	0.251
Not at all (ref)	1.00		
TELEVISION WATCHING HABIT.			
Every day or almost every day.	1.95	1.37-2.78	<0.001
Less than or once a week.	1.36	1.02-1.81	0.038
Not at all (ref)	1.00		

4.6.4 THE PREDICTORS OF BREASTFEEDING AMONG THE NON TEENAGE MOTHERS IN NIGERIA.

In the table below, non teenage mothers who are urban dwellers breastfed more (96.8%) compared with 94% of the rural dwellers NTM. This was significant at $p=0.003$.

The NTM from the North eastern region of the country breastfed more (98.2%) compared with those of them from the other zones. Zone was found to be significant at $p<0.001$.

Education, religion, marital status, type of health information received and exposure to mass media were not significant. These are not factors predicting breastfeeding among the non teenage mothers.

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Table 25: Predictors of breastfeeding among the non teenage mothers.

FACTORS	EVER BREASTFED		TOTAL	X ²	P-VALUE
	YES	NO			
LOCATION				9.01	0.003
Urban	762(96.8%)	25(3.2%)	787(100.0%)		
Rural	1589(94.0%)	102(6.0%)	1691(100.0%)		
ZONE				22.20	<0.001
North West	660(92.8%)	51(7.2%)	711(100.0%)		
North East	372(98.2%)	7(1.8%)	379(100.0%)		
North Central	430(96.6%)	15(3.4%)	445(100.0%)		
South West	374(95.9%)	16(4.1%)	390(100.0%)		
South East	190(94.1%)	12(5.9%)	202(100.0%)		
South South	325(92.6%)	26(7.4%)	351(100.0%)		
RELIGION				0.68	0.411
Islam	1327(95.2%)	67(4.8%)	1394(100.0%)		
Christianity	1005(94.5%)	59(5.5%)	1064(100.0%)		
LEVEL OF EDUCATION				0.01	0.924
Primary or lower.	753(95.4%)	36(4.6%)	789(100.0%)		
Secondary or higher.	777(95.3%)	38(4.7%)	815(100.0%)		
MARITAL STATUS				1.75	0.185
Currently married	2119(95.5%)	101(4.5%)	2220(100.0%)		
Never married	42(91.3%)	4(8.7%)	46(100.0%)		
RECEIVED INFORMATION ON CHILDSPACING/FP				0.36	0.551
Yes	750(97.7%)	18(2.3%)	768(100.0%)		
No	258(97.0%)	8(3.0%)	266(100.0%)		

RADIO LISTENING HABIT.				3.48	0.175
Every day or almost every day.	694(95.2%)	35(4.8%)	729(100.0%)		
Less than or once a week.	1027(95.7%)	46(4.3%)	1073(100.0%)		
Not at all.	595(93.7%)	40(6.3%)	635(100.0%)		
TELEVISION WATCHING HABIT.				1.17	0.556
Every day or almost every day.	454(95.8%)	20(4.2%)	474(100.0%)		
Less than or once a week.	698(95.2%)	35(4.8%)	733(100.0%)		
Not at all.	1130(94.6%)	65((5.4%)	1195(100.0%)		

4.6.5 PREDICTORS OF BREASTFEEDING AMONG NON TEENAGE MOTHERS FROM LOGISTIC REGRESSION ANALYSIS

The odds ratio and confidence intervals from logistic regression of NTM breastfeeding practice on variables are shown in table 26.

In the table below non teenage mothers residing in the North eastern part of the country are about five times more likely than those in the South southern part to breastfeed (OR=4.41, 95%CI=1.89-10.31) while those in the North central zone were about three times more likely to breastfeed (OR= 2.36, 95%CI=1.23-4.54).

Non teenage mothers in the urban areas are about two times more likely to breastfeed than those in the rural area (OR=1.98, 95%CI=1.25-3.13).

Table 26: The logistic regression analysis result of predictors of Breastfeeding among non teenage mothers.

FACTORS	ODDS RATIO	95% CI	P-VALUE
ZONE			
North-West	1.07	0.66-1.76	0.778
North-East	4.41	1.89-10.31	0.001
North-Central	2.36	1.23-4.54	0.010
South-West	1.56	0.81-2.99	0.182
South-East	1.22	0.60-2.49	0.577
South-South (ref)	1.00		
LOCATION			
Urban.	1.98	1.25-3.13	0.004
Rural (ref)	1.00		

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CHAPTER FIVE

DISCUSSION

The main objective of this study was to compare the maternal healthcare services utilization and breastfeeding practices of teenage and non teenage mothers in Nigeria by analyzing data from the 2007 NARHS Plus Survey which is nationally representative of the women in Nigeria.

Also, the predictors for the maternal healthcare services utilization and breastfeeding practices of teenage and non teenage mothers were determined.

5.1 DIFFERENCES IN SOCIODEMOGRAPHIC CHARACTERISTICS BETWEEN THE TEENAGE AND NON TEENAGE MOTHERS.

The mean age of the teenage(TM) and non teenage mothers(TM) were 17.6 years (SD=1.2 years) and 32 years (SD=7.9 years) respectively. The prevalence of teenage childbearing in the study population was 6.7%. A significantly larger proportion of teenage mothers in Nigeria reside in the rural areas, less were likely to reside in the Southern region, more were Muslims, less were currently married and educated compared to the non teenage mothers. These observations point to the fact that teenage pregnancy is more associated with poor socio-economic background. These findings; the distribution of location, geographical zone, educational attainment, religion and marital status correspond with the key findings of the 2008 NDHS and the 2007 study of Erulkar and Bello on the experience of married adolescent girls in Northern Nigeria, Overall, 23 percent of women age 15-19 years had begun childbearing. A larger proportion of teenagers in rural areas had also begun childbearing, those in the North West region had the largest proportion of teenagers who had started childbearing. The South East and South West also had the lowest proportions of teenagers who had started childbearing. The percentage of teenagers who had started childbearing decreased with increasing level of education. Teenagers with no education are more than twice as likely to start childbearing early compared to those with primary education and only 3 percent of teenagers with more than secondary education had begun childbearing. The lower a woman's level of education, the more likely it is that she will marry early and begin childbearing, play a reduced role in decision making, and exercise her reproductive rights.

5.2 COMPARISON OF ANC AND PNC UTILIZATION BETWEEN THE TEENAGE AND NON TEENAGE MOTHERS.

This study revealed that non teenage mothers utilized antenatal care better than the teenage mothers. This could be as a result of the NTM having a higher level of education; experience in childbearing and a stable income source that will enable them afford ANC. Also during such visits, more of the non teenage mothers were attended to by skilled attendants (doctors or nurses) compared to the teenage mothers. The teenage mothers' non utilization of maternal health care services could be as a result of stigmatization and poverty. These findings that teenage mothers poorly utilize ANC and low proportion of them saw skilled attendants during pregnancy corresponds with that of 2008 NDHS report and the finding of Nwogu, 2009 that both revealed that the percentage of mothers who received ANC from a health professional (or care with a health professional (CHP)) or skilled attendants appears higher among those aged 20-49 years than among those under 20 years. This implies that high proportion of women especially the teenage mothers may be abandoning expert care for cheaper nonprofessional ones probably because of the cost of services, lower socioeconomic status or may be concealing the pregnancy and this has significant negative implications on maternal and child health status in the country.

Results from this study showed that among the teenage mothers who received ANC, about three-quarters live in the urban areas, majority reside in the South-Western region of the country, mainly Christians by religion, had at least a secondary level of education and listen to the radio or view the television almost every day. This could be as a result of increased exposure of urban dwellers. The same also applies to their utilization of PNC.

The proportion (though less than half) of the non teenage mothers who received PNC doubled that of the teenage mothers. The reason for this could be that during ANC visits the teenage mothers were discriminated against or were stigmatized so after putting to bed they decided not to obtain PNC to avoid such treatments so they shy away from this service. The non teenage mothers who also utilized maternal health services were more of rural dwellers compared to the teenage mothers. They were mainly residents of the south eastern region rather than the teenage mothers of whom majority resided in south western region, more of Christians by religion, more educated and more exposed to the mass media than the teenage mothers. Also, out of the 71 that obtained P_NC, majority went to a public or government hospitals. This indicated that the

TM belong to lower socioeconomic class and might not be able to afford the high cost of services in private hospitals. The above findings agree with the 2008 NDHS report that more than half (67percent) of teenage mothers did not receive any postnatal care. This implies that the infant and child mortality and morbidity rate in the country will still be on the increase.

5.3 COMPARISON OF BREASTFEEDING PRACTICES BETWEEN THE TEENAGE AND NON TEENAGE MOTHERS.

In general, most of the mothers breastfed. This may be due to increased awareness during ANC on the importance of breastfeeding. This finding contradict that of Tella et al in 2008, a hospital-based assessment of breast-feeding behavior and practices among nursing mothers in Nigeria and Ghana reported that African nursing mothers do not breastfeed their infants. However, a lower proportion of the non teenage mothers compared to the teenage mothers practiced exclusive breastfeeding. This is possible since many of the teenage mothers might have discontinued schooling to fit into their roles as mothers and since higher proportion of them are married; they are mainly house wives therefore having more time at their disposal to breastfeed. Teenage mothers had higher proportion that breastfed their children immediately after birth compared to non teenage mothers. This may be as a result of teenage mothers having less experience in the act of breastfeeding and may be more anxious to start breastfeeding. NTM may however be more experienced in the act of breastfeeding and may not be eager to start immediately. However, TM had higher proportion weaning their children earlier compared to NTM. This may be that the TM had to go back to school to continue their education as opposed to NTM who are older and most likely have a stable source of income.

Though, all the results of the breastfeeding practices were not significant. Mothers generally know the importance of breast milk in their child's health, so this increase in breastfeeding will cause a reduction in infants mortality rate in the country but continued awareness and knowledge of the benefits of exclusive breastfeeding practices should be emphasized because none exclusively breastfed infants are exposed to risk of infection

5.4 THE PREDICTORS OF ANC UTILIZATION.

From the results of this study, the demographic predictors of ANC utilization among the teenage mothers were location and level of education while among the non teenage mothers; location, geographical zone and level of education were the predictors. Being rural dwellers, teenage mothers are disadvantaged because most rural areas are deprived of basic health amenities such as a primary health centre where ANC might be received and the proximity of the available clinic. Education serves as a proxy for information, cognitive skills, and values; teenage mothers' lower level of education will definitely hinder them from acquiring more knowledge for safe motherhood.

The finding of this study that one of the predictors of ANC utilization is education agrees with the study of Babalola and Fatusi, 2009 who reported that education is a significant predictor of maternal health service utilization, also, Ikeako et al, 2006 in their study found that formal education is still a significant predictor of whether women deliver within or outside health institutions in Enugu, south-eastern Nigeria and Gage, 2006 who reported that poverty, lack of education, and residence in the northeast and northwest regions were associated with non-receipt of recommended antenatal or delivery care in Nigeria. Education exerts effect on health-seeking behavior through a number of ways which include higher level of health awareness and greater knowledge of available health services among educated women and their enhanced level of autonomy that results in improved ability and freedom to make health-related decisions, including choice of maternal services to use will be lacked by the teenage mothers.

5.5 THE PREDICTORS OF PNC UTILIZATION.

The predictors of PNC utilization among the teenage mothers was only education but among the non teenage mothers the predictors were zone, location, level of education and television viewing habit in this study. PNC utilization is equally as important as ANC utilization. Education being the only predictor of PNC utilization among teenage mothers is because teenage mothers in Nigeria do not have formal education. This aligns with the 2008 NDHS report which revealed that PNC utilization varies by zones among the women that obtained it and Nikiema et al (2009) in their study on providing information on pregnancy complications during antenatal visits.

unmet educational needs in sub-Saharan Africa revealed that more than 50% of women reported receiving no information on childcare. Since the teenage mothers mainly had primary or lower level of education, they will hardly obtain PNC, they might experience complications arising from the delivery and miss the important information on how to care for themselves and their children. Women's exposure to information through the radio, television and newspaper significantly increases the utilization rates for all services (maternal health services inclusive).

5.6 PREDICTORS OF BREASTFEEDING.

None of the variables were predictors of breastfeeding practices among the teenage mothers but for the non teenage mothers, zone and location were the predicting factors. Residing in an urban area is a proxy for greater exposure to information from different media channels or greater utilization of health services with staff better trained on infant feeding. It is commonly known that the modern health care providers tend to concentrate in urban areas, which may result in location being a predictor of breastfeeding.

This is similar to some of the findings of Wambach et al, 2005 that; urban-rural residence, maternal education, and age affect of breastfeeding initiation.

Mothers living in urban areas may be more open to new ideas, whereas living in rural areas may be associated with more traditional views.

A higher proportion of people in Nigeria are resident in the rural areas and most of the respondents are rural dwellers. Therefore it is believed that the findings of this study are representative of Nigerian mothers.

5.7 CONCLUSION.

Teenage mothers in this study poorly utilized maternal health care services. The breastfeeding practices of the teenage mothers were generally good though, the results were not significant.

Though utilization of the available maternal health care services is generally low, teenage mothers have poorer levels of utilization of these services. Effective interventions targeting teenage mothers should focus on rural women, never married, of lower education and residence in north western zones.

5.8 RECOMMENDATIONS.

- There is a need for increase in the awareness in the community about the teenage pregnancy and childbearing, its adverse birth outcomes and inadequate utilization of maternal health care services.
- Awareness about the need and advantages of booking early in pregnancy should be highlighted in the population. This can be achieved through community based programmes such as using mass media; involving primary or community based health care workers and local community leaders.
- Addressing related issues such as regular attendance at antenatal and post natal clinics and proper breast feeding practices to prevent some of the avoidable complications in the teenage mothers through the antenatal classes which should preferably be held separately from the older age group mothers
- The health care providers should consider teenage pregnancy as a high risk pregnancy with increased incidence of certain obstetric complications. To minimize the complications, they must be considered as high risk pregnancies and should receive prenatal care by having an increased number of visits to detect complications early in gestation to manage them in timely fashion, especially in the younger teenagers who are more likely to have them.
- Sexual reproductive health (SRH) programmes to reduce the severe consequences of early sexual activity for teenagers should be introduced in schools' curriculum. Teen age or adolescent friendly interventions such as pregnancy groups targeting empowering pregnant adolescents with information on pregnancy, delivery and early childhood care

should be introduced and implemented to improve their health and that of their infants. The intriguing phenomenon of early motherhood calls for enhanced access to reproductive health services. Sexual education should begin before puberty. This might offer an opportunity to girls to make informed choices about their sexual activities.

- Finally, a comprehensive approach to reduce teenage child bearing should be put in place, such that its success might even require a multi-disciplinary intervention and high community and parental involvement.

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REFERENCES

- Aboyeji Abiodun P., Fawole Adisa A. and Ijaiya M. Aderemi, 2001: Knowledge and previous contraceptive use by pregnant teenagers in Nigeria. *Trop Jour Obstet Gynecology*; 18(2).
- Aderibigbe SA, Araoye MO, Akande TM, Musa OI, Sanya EO and Adesina KT, 2010: Effect of Health Education on Knowledge and Practice of Contraception among Students of Public Secondary Schools in Ilorin, Nigeria. *Research Journal of Medicine and Medical Sciences*, 5(1): 100-105.
- Agho Kingsley E, Michael J, Odiase Justice I and Ogbonmwan Sunday M, 2011: Determinants of exclusive breastfeeding in Nigeria. *BMC Pregnancy and Childbirth* 2011, 11:2.
- Ajieroh Victor, 2009: A Quantitative Analysis of Determinants of Child and Maternal Malnutrition in Nigeria. NSSP Background Paper 10, International Food Policy Research Institute.
- Akinrinola Bankole, Fatima H. Ahmed, Stella Neema, Christine Ouedraogo and Sidon Konyani, 2007: Knowledge of correct condom use and consistency of use among adolescents in four countries in Sub-Saharan Africa. *Afr J Reprod Health* 2007; 11[3]:197-220).
- Alan Guttmacher Institute, 2004: Early childbearing in Nigeria: a continuing challenge.
- Alemayehu Tewodros, Jemal Haidar, Dereje Habte, 2009: Determinants of exclusive breastfeeding practices in Ethiopia. *Ethiop.J.Health Dev*; 23(1).
- Arowojolu AO and Adekunle AO, 2000: Perception and practice of emergency contraception by post-secondary students in South West Nigeria, *African Journal of Reproductive Health*, 4(1):56-65.
- Babalola Stella and Fatusi Adesegun, 2009: Determinants of use of maternal health services in Nigeria - looking beyond individual and household factors. *BMC Pregnancy Childbirth*; 9: 43.
- Chung M, Raman G, Chew P, Magula N, DeVine D, Trikalinos T, Lau J, 2007: Breastfeeding and maternal and infant health outcomes in developed countries. Rockville, MD; US Department of Health and Human Services; <http://www.ahrq.gov/downloads/pub/evidence/pdf/brfour/brfour.pdf>

Fatusi AO, 2005: Adolescent sexual and reproductive health needs in Nigeria: shaping a pragmatic and effective response. *J Comm Med & Pry Health Care*. 17:1-6.

Federal Ministry of Health, 2005: Road map for accelerating the attainment of the millennium development goals related to maternal and newborn health in Nigeria. Abuja.

Federal ministry of health, Nigeria, 2011: Saving newborn lives in Nigeria. NEWBORN HEALTH in the context of the Integrated Maternal, Newborn and Child Health Strategy. Revised 2nd edition, 2011.

Gage, 2006: Factors associated with the utilization of maternal health services in Nigeria. A recorded presentation. The 134th Annual Meeting & Exposition (November 4-8, 2006) of APHA.

Ikeako LC, Onah HE, and Iloabachie GC, 2006: Influence of formal maternal education on the use of maternity services in Enugu, Nigeria. *J Obstet Gynaecol*. 2006 Jan; 26 (1):30-4.

Jolly MC, Sebire N, Harris J, Robinson S, Regan L, 2000: Obstetric risks of pregnancy in women less than 18 years old. *Obstet Gynecol*; 96: 962-966.

Jones, G., R.W. Steketee, R.E. Black, A.Z. Bhutta and S.S. Morris, 2003: The Bellegio child survival study group. How many child deaths can we prevent this year? *Lancet*, 262: 65-71.

Lynn Atuyambe, Florence Mirembe, Nazarius M Tumwesigye, Johansson Annika, Edward K Kirumira and Elisabeth Faxelid, 2008: Adolescent and adult first time mothers' health seeking practices during pregnancy and early motherhood in Wakiso district, central Uganda. *Reproductive Health* 2008, 5:13.

Mayor Susan, 2004: Pregnancy and childbirth are leading causes of death in teenage girls in developing countries. *BMJ*; 328:1152

Mutihir J. T. and Maduka W. E, 2006: Comparison of Pregnancy Outcome Between Teenage and Older Primigravidae in Jos University Teaching Hospital, Jos North-Central Nigeria. *Annals of African Medicine*, Vol. 5, No. 2, pp. 101-106.

National Demographic Health Survey (NDHS), 2003

National Demographic Health Survey (NDHS), 2008a.

National Demographic Health Survey (NDHS), 2008b. Key Findings

National Population Commission (NPC), 2004. Nigeria Demographic and Health survey, 2003,

Negussie Taffa and Francis Obare, 2004: Pregnancy and child health outcomes among adolescents in Ethiopia. *Ethiop.J.Health Dev.* 2004; 18(2):90-95.

Nikiéma Béatrice, Beninguisse Gervais and Haggerty Jeannie L, 2009: Providing information on pregnancy complications during antenatal visits: unmet educational needs in sub-Saharan Africa. *Oxford Journals of Medicine, Health Policy and Planning* Volume24, Issue5 Pp. 367-376.

Nwogu E. C, 2009: Utilization of Maternity Care in Nigeria. *Global Journal of Pure and Applied Sciences.* vol 15, NO. 3, 2009: 439-437.

Owolabi A T, Fatusi A O, Kuti O, Adeyemi A, Faturoti S O and Obiajuwa P O, 2008: Maternal complications and perinatal outcomes in booked and unbooked Nigerian mothers, *Singapore Med Journal.* Original Article 2008; 49(7): 526.

Perez-Escamilla R and Guerrero ML, 2004: Epidemiology of breastfeeding: advances and multidisciplinary applications. *Adv Exp Med Biol.*; 554:45-59.

Rank J, 2011: Adolescence. <http://www.healthofchildren.com/>. retrieved on 13th Jan, 2011.

Reynolds HW, Wong EL and Tucker H, 2006: Adolescents' use of maternal and child health services in developing countries. *International family planning perspectives.* 32(1):6-16.

Salami Lilian, 2006: Factors Influencing Breastfeeding Practices in Edo State, Nigeria. *African Journal of Food Agriculture Nutrition and Development.* Volume 6; 2.

Sarkar Prosannajid, 2009: Indicators of Maternal Health Care Services: Bangladesh Context. *Pakistan Journal of Social Sciences,* 2009 Volume 6, Issue 3, Page No: 168-174.

Singh Susheela, Suzette Audam and Deirdre Wulf, 2007: Early Childbearing in Nigeria: A Continuing Challenge. The Alan Guttmacher Institute.

Siv Gustafsson and Seble Worku, 2007: Teenage Motherhood and Long-run Outcomes in South Africa. Tinbergen Institute Rotterdam discussion papers downloaded at <http://www.tinbergen.nl>

Spear HJ, 2004: Nurses' attitudes, knowledge, and beliefs related to the promotion of breastfeeding among women who bear children during adolescence. *J Pediatr Nurs.* 2004;19:176-183.

Tella Adeyinka, Falaye Ajibola and Aremu Oyesoji, 2008: A Hospital-Based Assessment of Breast-Feeding Behaviour and Practices among Nursing Mothers in Nigeria and Ghana. *Pakistan Journal of Nutrition* 7 (1): 165-171.

Ukegbu AU, Ebenebe EU and Ukegbu PO, 2010): Breastfeeding pattern, anthropometry and health status of infants attending child welfare clinics of a teaching hospital in Nigeria. *South African Journal of Clinical Nutrition.* 23(4):191-196

UNFPA, 2005: Country Profile for Population and Reproductive Health Policy Development and indicators

UNICEF, 2009: The State of the World's Children 2009. New York: United Nations Children's Fund.

Wales Jimmy, 2010: Teenage pregnancy. <http://wikimediafoundation.org/wiki/special>. Accessed on 24 November, 2010.

Wambach Karen, Campbell Suzanne Hetzel, Dodgson Sara L. Abiona Titilayo C. and Heinig M. Jane, 2005: Clinical Lactation Practice: 20 Years of Evidence. *Journal of Human Lactation.* 2005; 21; 245.

Wikipedia: Adolescence. Wikimedia foundation. Accessed 8th Jan, 2011.

World Health Organization, 2001. Reproductive Health Indicators for Global Monitoring Report of the Second interagency meeting 2001, WHO/RHR/01.19 Geneva

World Health Organization, 2004: Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO

World health organization, 2006: **Pregnant Adolescents. Delivering on Global Promises of Hope**

World Health Organization, 2007a: **Adolescent pregnancy – Unmet needs and undone deeds.**

World Health Organization, 2007b: **Maternal mortality in 2005: estimates developed by WHO, UNICEF, UNFPA, and the World Bank. Geneva, WHO.**

World Health Organization, 2009: **Nigeria Country Profile. Department of making pregnancy safer.**

World Health Organization, 2010a: **Department of Making Pregnancy Safer. Position paper on mainstreaming adolescent pregnancy in efforts to make pregnancy safer.**

World Health Organization, 2010b: **Department of Making Pregnancy Safer. Sierra Leone**

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2007 NATIONAL HIV AND AIDS AND REPRODUCTIVE HEALTH SURVEY (NARHS PLUS)

NIGERIA

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INDIVIDUAL INTERVIEW

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SCHEDULE FOR WOMEN AGED 15-49 YEARS AND MEN AGED 15-64 YEARS

STATE

CLUSTER

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000 STATE _____

001 ZONE _____ CODE

002 LOCAL GOVT. AREA _____

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003 LOCALITY _____

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004 LOCATION (URBAN=1 OR RURAL=2)

005 HOUSEHOLD NUMBER

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Introduction: My name is..... I am working for the Federal Ministry of Health. We are interviewing people here in [NAME OF CITY, TOWN OR SITE] in order to find out about certain behaviors that affect people's health in this environment.

Confidentiality and consent: I am going to ask you questions some of which may be very personal. Your answers are completely confidential. Your name will not be written on this form, and will never be used in connection with any of the information you tell me. You may need to know that this exercise is taking place all over the country. Your honest answers to these questions will help us better understand what people think, say and do about certain kinds of behaviours. The information collected from you and people like you will help the government to find solution to some health problems affecting people in this environment. We would greatly appreciate your help in responding to this survey. My supervisor may come back later to verify this information.

(Signature of interviewer certifying that informed consent has been given verbally by respondent)

Interviewer visit

	Visit 1	Visit 2	Visit 3
Date			
Result			
Interviewer			

Result codes: 1...Completed; 2...Respondent not available; 3...Refused; 4...Partially completed; 5... Others (Specify).

006 INTERVIEWERS: Code [] [] Name _____ Signature _____

007 DATE OF INTERVIEW: ____ \ ____ \ ____ TIME INTERVIEW STARTED _____
 DD MM YYYY

CHECKED BY SUPERVISOR _____ CODE [] [] Date _____

Name of Coder _____ [] [] Signature _____ Date _____

Section 1: Background characteristics

No.	Questions and filters	Coding categories	Skip to
Q103	How old were you as at your last birthday? [COMPARE WITH Q102 IF NEEDED AND CORRECT Q103]	Age in completed years [] [] []	
Q105	Have you ever attended school?	Yes..... 1 No..... 2	→Go to Q107
Q106	What is the highest level of school you attended: Quranic only, primary, secondary or higher?	Quranic only..... 1 Primary..... 2 Secondary..... 3 Higher..... 4	

No.	Questions and filters	Coding categories	Skip to
Q111	What is your religion?	Islam..... 1 Protestant..... 2 Catholic..... 3 Traditional..... 4 No religion..... 5 Others specify []..... 6 No Response..... 9	

Section 2: Childbirth, breastfeeding, antenatal and postnatal care

No.	Questions and filters	Coding categories	Skip to																		
Q201	<p>[ASK WOMEN ONLY IF MALE GO TO Q233]</p> <p>I would like to ask you about all the births you have had during your life. Have you ever given birth?</p>	<p>Yes 1</p> <p>No 2</p> <p>No Response 9</p>	→Go to Q233																		
Q201A	How old were you when you gave birth for the very first time?	<p>Years..... [] []</p> <p>Don't know 88</p> <p>No response 99</p>																			
No.	Questions and filters	Coding categories	Skip to																		
Q216	Did you see any one or receive any antenatal care in YOUR last pregnancy?	<p>Yes..... 1</p> <p>No..... 2</p>	→Go to Q 219																		
Q217	<p>Which of the following did you see?</p> <p>[READ OUT, MULTIPLE RESPONSE POSSIBLE]</p>	<table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Doctor</td> <td>1</td> <td>2</td> </tr> <tr> <td>Nurse/Midwife</td> <td>1</td> <td>2</td> </tr> <tr> <td>Auxillary nurse</td> <td>1</td> <td>2</td> </tr> <tr> <td>Community health extension workers</td> <td>1</td> <td>2</td> </tr> <tr> <td>Traditional birth attendant</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		Yes	No	Doctor	1	2	Nurse/Midwife	1	2	Auxillary nurse	1	2	Community health extension workers	1	2	Traditional birth attendant	1	2	
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Auxillary nurse	1	2																			
Community health extension workers	1	2																			
Traditional birth attendant	1	2																			
Q218	How many times did you receive/go for antenatal care during the pregnancy?	<p>No of times [] []</p> <p>Not sure 88</p>																			

Q220	Did you go for postnatal care after the delivery?	Yes.....1	
		No.....2	→Go to Q 221

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No.	Questions and filters	Coding categories	Skip to																					
Q220A	Where did you go for the Postnatal care? [MULTIPLE CODES POSSIBLE]	<table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Government Hospital/Health Centres</td> <td>1</td> <td>2</td> </tr> <tr> <td>Private Hospital</td> <td>1</td> <td>2</td> </tr> <tr> <td>Maternity Home</td> <td>1</td> <td>2</td> </tr> <tr> <td>Faith Based Maternity</td> <td>1</td> <td>2</td> </tr> <tr> <td>Traditional Birth Attendant (TBA)</td> <td>1</td> <td>2</td> </tr> <tr> <td>Others Specify [.....]</td> <td></td> <td></td> </tr> </tbody> </table>		Yes	No	Government Hospital/Health Centres	1	2	Private Hospital	1	2	Maternity Home	1	2	Faith Based Maternity	1	2	Traditional Birth Attendant (TBA)	1	2	Others Specify [.....]			
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Q220B	Did you receive any information on...? [READ OUT] [PROBE FOR OTHERS]	<table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Child spacing/Family Planning</td> <td>1</td> <td>2</td> </tr> <tr> <td>Breastfeeding</td> <td>1</td> <td>2</td> </tr> <tr> <td>Care of the newborn</td> <td>1</td> <td>2</td> </tr> <tr> <td>Others specify [.....]</td> <td></td> <td></td> </tr> </tbody> </table>		Yes	No	Child spacing/Family Planning	1	2	Breastfeeding	1	2	Care of the newborn	1	2	Others specify [.....]									
	Yes	No																						
Child spacing/Family Planning	1	2																						
Breastfeeding	1	2																						
Care of the newborn	1	2																						
Others specify [.....]																								
Q221	[ASK FOR NAME OF LAST CHILD] Did you ever breastfeed [NAME]?	Yes.....1 No.....2	→Go to Q233																					
Q222	How long after birth did you first put [NAME] to breast?	Immediately after birth..... 1 Hours after birth..... 2 Days after birth..... 3 Don't know..... 8																						
Q223	Where is the child now? [DETERMINE IF LIVING OR DEAD]	Living1 Dead.....2	→Go to Q233																					

Q226	CHECK 214. IS THE CHILD UNDER 2 YEARS OF AGE? [23 MONTHS AND BELOW] YES/NO → ↓	→ → → → → →	→Go to Q233
Q227	Are you still breastfeeding [MENTION CHILD'S NAME]	Yes.....1 No.....2	→Go to Q229
Q228	For how many months did you breastfeed? [MENTION CHILD'S NAME]	[] NUMBER Don't know.....98	Go to Q233
Q229	How many times did you breastfeed [MENTION CHILD'S NAME] last night between sunset and sunrise?	[] NUMBER OF NIGHT TIME FEEDING Not sure/Don't know.....99	
Q230	How many times did you breastfeed [MENTION CHILD'S NAME] yesterday during the daylight hours?	[] NUMBER OF DAYLIGHT FEEDING Not sure/Don't know.....99	
Q231	Did [CHILD'S NAME] drink/eat anything apart from breast milk yesterday or last night?	Yes.....1 No.....2	→Go to Q233

Q232	At what age did you first introduce other liquids, semi-solid or solid food apart from breast milk?	<div style="text-align: center;">[] []</div> <p>AGE IN MONTHS</p> <p>Cant remember/Don't know.....99</p>	
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No.	Questions and filters	Coding categories	Skip to
	Now I would like to ask you some questions on marriage.		
Q236	Which of these best describes your marital status? Are you... [READ OUT]	Currently married..... 1 Living with a sexual partner..... 2 Never married..... 3 Separated..... 4 Divorced..... 5 Widowed..... 6 No Response..... 9	→Go to Q301
Q237	How old were you when you first married or started living with a sexual partner?	Age in years [] [] Cant remember/Don't know 88	Check 236. If not currently married in Q236 go to Q301

Q1418	<p>How often do you listen to radio; is it every day, almost every day, at least once a week, less than once a week or not at all?</p> <p>[SINGLE CODE]</p> <p>[READ OUT OPTIONS]</p>	<p>Every day/Almost every day..... 1</p> <p>At least once a week..... 2</p> <p>Less than once a week 3</p> <p>Not at all..... 4</p> <p>Don't know..... 8</p>	
Q1419	<p>How often do you watch television; every day, almost every day, at least once a week, less than once a week or not at all?</p> <p>[SINGLE CODE]</p> <p>[READ OUT OPTIONS]</p>	<p>Every day/Almost every day 1</p> <p>At least once a week 2</p> <p>Less than once a week..... 3</p> <p>Not at all 4</p> <p>Don't know 8</p>	

INTERVIEW CLOSING TIME.....DATE.....

LANGUAGE (s) THAT THE INTERVIEW WAS CONDUCTED IN.....CODE..... (check Q107 for language codes)

INTERVIEWER'S COMMENTS.....

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SUPERVISOR'S COMMENTS.....

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SAPC's COMMENTS.....

.....

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Name.....

Signature/Date.....

RHC's COMMENTS.....

.....

.....

Name.....

Signature/Date.....

TC/SMC COMMENTS.....

.....

.....

Name.....

Signature/Date.....

