PREVALENCE AND DETERMINANTS OF MODERN CONTRACEPTIVE USE AMONG POSTPARTUM WOMEN IN SELECTED SECONDARY HEALTH CARE FACILITIES IN IBADAN, OYO STATE, NIGERIA

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DEDICATION

This project is dedicated to Almighty God and to my precious mother (Mrs Margaret Toluremi Bobadoye) for giving me opportunity to enroll and sponsoring this programme.

ABSTRACT

Women of reproductive age especially postpartum women are exposed to the risk of pregnancies. Contraceptive use during the postpartum period would reduce rates of maternal and infant mortality by preventing unplanned, unwanted pregnancies and by spacing new pregnancies at least two years after the previous birth. This study determined the prevalence and determinants of modern methods of contraceptives use among postpartum women in Ibadan.

The study was a descriptive cross-sectional survey which adopted a 3-stage sampling technique. Ibadan North, Ibadan South East, Ibadan South West Local Government Areas (LGAs) were randomly selected from five LGAs in Ibadan metropolis and one secondary health care facility was randomly selected from each of these LGAs. On the whole, 444 Postpartum Women (PW) were consecutively recruited into the study. A semi-structured interviewer administered questionnaire was used to elicit information on socio-demographic characteristics, knowledge of Modern Contraceptive Methods (MCMs), contraception practice within one year of delivery, (MCMs) and intention to use contraceptives within one year of delivery. Knowledge was measured on a 10-point scale with scores < 5 and ≥ 5 classified as poor and good respectively. Descriptive statistics, Chi-square and logistics regression analysis were used to analyse the data at 5% level of significance.

Mean age of the PW was 29.4 ± 5.1, 45.0% had tertiary education and 73.0% had one or two children Majority (66.8%) resumed menstruation within nine months of delivery. The proportion who reported the use of MCMs was 61.7%. The preferred MCMs used by respondents included male condom (52.3%), intra uterine contraceptive device (11.7%), pill (11.0%), injectables (8.8%) and emergency contraception (8.8%). Mean knowledge score on MCMs out of 10 points was 5.1 ± 2.4 and 57.7% had good knowledge of MCMs. The PW with good knowledge of MCMs were four times more likely to use MCMs than those with poor knowledge (OR=4.5,95% CI=3.0-6.8). Also those that had resumed menstruation were about two times more likely to have used MCMs than those that had not (OR =1.9, 95% CI = 1.3-2.9). Among those that were currently using MCMs, 12% complained of side effects including; heavy menstrual loss (41.7%), excessive weight gain (16.7%), severe uterine cramps (16.7%) and heavy menstrual bleeding (8.3%). Ninety five (61.7%) out of one hundred and fifty four that were not practicing MCMs

had no intention to use any of the method. Reasons for non-use were fear of side effects (33.8%), desire to have more children (27.6%), husband's disapproval (22.9%), previous negative experience (6.2%) faith/religion's disapproval (5.2%) and friend's disapproval (4.3%). Determinants of intention to use MCMs included having tertiary education (OR= 2.1, 95% CI =1.1-4.3) and having at least three children (OR=3.0, 95% CI=1.1-5.0).

Prevalence of modern contraceptive use was high among postpartum women. Mother's educational level and number of children were the key determinants of MCMs use. Intervention programmes should focus primarily on postpartum women with lower education levels and fewer numbers of children

Keywords: Modern contraceptive methods, Postpartum women, Contraceptive determinants, Contraceptive use.

Word counts: 475

CERTIFICATION

I certify that this work was carried out by Miss Bobadoye Iyadunni Wura in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan, Oyo state, Nigeria.

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CPR:	Contraceptive Prevalence Rate
DHS:	Demographic and Health Survey
FOS:	Federal Office of Statistics
ICPD:	International Conference on Population and Development
IUCD	Intra Uterine Contraceptive Device
MCMs:	Modern Contraceptive Methods
MDGs:	Millennium Development Goals
NDHS:	Nigerian Demographic and Health Survey
NFS:	Nigerian Fertility Survey
NGO	Non Governmental Organization
NPC:	National Population Commission
PRB:	Population Reference Bureau
PW:	Postpartum Women
TFR:	Total Fertility Rate
UN:	United Nations
UNFPA:	United Nation Population Fund
UNPD:	United Nation Population Division
UNPFA:	United Nation Family Planning Association
USAID:	United States Agency for International Development
WFS:	World Fertility Survey
WHO:	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background

Postpartum period is a unique phase in the life of a woman and her new born; it is a time of transition, adjustment and adaptation to social and psychological changes (WHO, 2008). This period is of importance because it is the time when women are especially vulnerable to unplanned pregnancies (Conde-Agudelo, 2005). During this period women can be introduced to beneficial practices among which, is the use of contraceptive methods (WHO, 2008). Offering contraceptives to postpartum women can help protect their health and that of their newborns by prolonging the interval of the next pregnancy (WHO, 2011).

Contraception involves the act of intentional prevention of pregnancy using various methods. It has been in existence since ancient civilizations. Contraceptives are primarily meant for prevention of conception, which could be for spacing or delaying next pregnancy or stopping reproduction through the use of various devices, sexual practices, chemical drugs or surgical procedure (Dawn, 2009). Postpartum contraception is critical for women in preventing unintended pregnancy and reducing the lifetime risk of maternal mortality by safe birth interval (Ross et al, 2003). Postpartum contraception is defined as the initiation and use of a contraceptive method after childbirth or abortion but, before fertility return (FHI, 2010). It has long been recognized as an important component of maternal health care; through birth spacing and prevention of high-risk and unwanted pregnancies (Levitt et al, 2004). It helps women who have recently delivered to avoid exposure to the risks of maternal death (Akinlo et al, 2013). It benefits the woman, her children and the society.

Postpartum period is the 12 month period that follows child birth (Ross et al, 2003). Biologically, return of menses falls within the postpartum period which ranges widely among women and across societies (Ross et al, 2001). Postpartum period is very crucial as it is marked by psychological changes and stabilization of hormones (Rahmanpour et al, 2010). This period presents a rising risk of unwanted conception and often frustrated desire for contraceptive protection (Ross et al, 2001; Depineres et al, 2005). The risk is even greater among mothers, who do not know what to expect after their first delivery and

rely on advice and explanations from their female relatives, neighbours and friends (Salway and Nurani, 1998). Contraception and sex are probably the last things on mothers list of priorities during the first days after delivery (Glasier, et al, 1996). Postpartum period is particularly important for initiating contraception to space births in a healthy manner. Physicians, health care providers and midwives pay little attention to preferences and attitudes of women in the postpartum period.

Ross and Winfrey (2001) established that from 7 to 9 months after delivery, most postpartum women were exposed to pregnancy; yet did not use contraceptives (Ross et al, 2001). Many women do not use modern contraceptive until the return of menstruation. However, they become fecund before menstruation returns, and, thus, are at risk of unwanted pregnancy if sexual activity has resumed (Borda et al. 2010). previous studies have revealed that most postpartum mothers are not aware of the factors associated with return of fertility and do not think they are at risk of pregnancy during the first year after giving birth. Consequently, these mothers are reluctant to use modern contraceptive or are using unreliable methods associated with high failure rate such as withdrawal and natural methods (Salway and Nurani, 1998; Shaaban and Glasier, 2008; Rojnik et al, 1995).

Unintended pregnancy is a global occurrence, and has been identified as the root cause of abortion worldwide. Particularly in the developing world, unintended pregnancy is risky for both the woman and her new born. About 70,000 women die each year from unsafe abortion in Nigeria (USAID, 2005; NDHS, 2008). Unintended, unwanted pregnancies, abortion, maternal and foetal morbidity and mortality could be reduced by prenatal and postpartum contraceptive counseling (Salway et al, 1998). Postpartum women who engaged in unprotected sexual intercourse have experienced unwanted and unplanned pregnancies that accounts for unsafe abortion. They contribute 20-40% of 60,000 maternal deaths that occur yearly in Nigeria (Bankole et al, 2006, Henshaw, 2008).

Previous studies have shown that the use of contraceptives can prevent 25% of 40% of maternal deaths by preventing unintended and unwanted pregnancies and about 10% of child deaths by eliminating inter-birth intervals of less than 2 years. The use of contraception during the first year postpartum has the potential to significantly reduce the number of unintended pregnancies. (Campell et al, 2006, Cleland et al, 2006). Ross and Winfrey (2001) stated that women who fail to obtain contraceptives soon after giving birth

would become exposed to pregnancy within 7 and 9 months of postpartum (Ross et al. 2001).More than 200 million women in developing countries who would like to delay their next pregnancy or even stop bearing children altogether still rely on traditional and less effective methods of contraception or use no method at all. If all such women used a modern method, unintended pregnancies in the developing world would plummet and the lives of many women and newborns would be saved each year (Singh et al, 2003).

Methods that women use differ by race, ethnicity, age, marital and socio-economic status Such variations pherhaps reflect lack of awareness, cultural factors, religion and opposition to use by partners. Fear of health risk and side effects of contraception are significantly associated with contraceptive unmet need for postpartum women and other factors contributed to low contraceptive prevalence rate (Raine et al, 2002, Steiner, 1999). Lack of access to modern contraceptives is considered a major factor behind the estimated 76 million unplanned pregnancies in developing countries, placing more women at risk of maternal mortality and morbidity (USAID, 2004). These have contributed to one in ten ending in an unwanted pregnancy suggesting up to 760,000 induced abortions annually in Nigeria. These unwanted pregnancies are also a reflection of low contraceptive prevalence rate in Nigeria, which is one of the factors that accounts for its high maternal, infant and neonatal mortalities (Bankole et al, 2006).

Previous studies have shown that closely spaced pregnancies pose health risks to the mother and her new born. (NPC, 2003, Columbien,2004, Ross et al, 2001) An analysis of data from Nigeria Demographic Health Survey shows that babies born less than two years are more likely to die in the first year compared to the babies born after an interval of three years. Adequate spacing of pregnancy 24 months from delivery to the next pregnancy could save the lives of mothers and the new born. (NPC, 2003, Conde- Agudelo et al, 2000). Family planning could prevent up to one-third of all maternal deaths by allowing women to delay motherhood, space births, avoid unintended pregnancies, unsafe abortions and stop child bearing when they have reached desire family size (Columbien et al, 2004).

Determinants identified for low adoption of modern contraceptive methods in Nigeria were myths and misinformation of MCMs passed from one or more persons to another. These included perceived side effects, perceived future infertility. These factors also

been identified to affect adoption of modern contraceptives by postpartum women (Orji et al, 2002, Ankomah et al, 2011). Other determinants include lack of awareness, lack of access to quality services, cultural factors, religion and opposition to use by partners or family member. Fear of health risks, literacy, timing of resuming sexual activity after delivery, infant feeding choice and desire to have large family size (Carr et al, 2004).

1.2 Problem Statement

Maternal health remains a global concern since pregnancy and childbirth are leading causes of death, diseases and disability among women of reproductive age (WHO, 2005). In the developing world and Nigeria in particular, unwanted pregnancy, unsafe induced abortion, high fertility rate and high maternal mortality rates are serious reproductive health problems that require urgent attention (Oye-Adeniran et al, 2002, WHO, 2002). When human reproduction is left unchecked, it results in high birth rates, bringing about large family size with negative effects on the health of the respective mothers and children. Consequently this leads to negative impact on the family, the community and the nation at large as a result of economic overload in covering the additional demand. Indeed, uncontrolled births can destroy a nation's development aspirations and prevent its people from enjoying an improved standard of living (Kessy et al, 2006).

More than one third of the 205 million pregnancies that occur worldwide annually are unintended. An estimated 215 million women in the developing countries have an unmet need for family planning, and 82 percent of unintended pregnancies in the developing countries occur among women with unmet need (Guttmacher, 2012). Two-third of these unintended pregnancies occurs among women who are not using any method of contraception (Ross et al, 2001).

Lack of contraceptive use is an important factor that contributes to unwanted pregnancies in Nigeria, these unwanted pregnancies often lead to closed-spaced pregnancies and short birth interval hence they are mostly terminated by illegal and unsafe abortions. All these contribute to 20%-40% of about 60,000 maternal deaths that occur yearly in Nigeria (WHO, 2004). Those unaborted result in unwanted births which pose risk to the children's health, wellbeing and contributing to rapid population growth in this resourced trapped country (Bankole et al, 2006).

The Nigeria Demographic Health Survey (2007) revealed that only 10 percent of women are using modern contraceptive methods and while about 11 percent of pregnancies are unplanned, 4 percent of births were mistimed hence the total fertility rate (TFR) lifetime average number of children per woman has been consistently high and stands at 5.7 children per woman in Nigeria (NPC, 2008). Contraceptive Prevalence Rate (CPR) stands at 21% among all women of reproductive age in the South West with 10% using modern methods (NDHS, 2008).

Nigeria is known to record one of the highest maternal mortality rates in the world as reports indicate that 1 in 13 women continue to die from pregnancy related causes (Umoiyoho et al, 2005). Many factors have contributed to unintended pregnancy in Nigeria. A very important factor is the low level of contraceptive use (Mojonk et al, 2010).

1.3 Justification for the Study

Globally, more than 90 percent of women want to either delay or avoid future pregnancies during the first year postpartum (Ross and Winfrey 2001). The prevalence of modern contraceptive methods is still low in many sub-saharan African countries (Mojonk et al, 2010). However, it is a proven fact that effective and consistent use of modern contraceptives enables couples to achieve desired birth intervals, fertility, ideal family size and consequently a decline in fertility (Kirk et al, 1998, Rafalimanana et al, 2000, Jain, 2001). In sub-Saharan Africa, the proportion of postpartum women who are exposed to the risk of pregnancy by having sexual intercourse while using no contraceptive method within two years after child birth is nearly 33%. For these women, addressing unmet need for contraception in the postpartum period is crucial for child survival as well as maternal health (Clement et al, 2004, Magadi et al, 2003).

Contraceptive use reaches far beyond the individual level for women and their families. After child birth a woman has special needs, which include the challenge of caring for her newborn, recovery from pregnancy, delivery and desire to space or limit child birth. In spite of these specific needs, little attention is paid to postpartum contraception (Foster et al, 2009). Women who can plan the number and timing of birth of their children enjoy improved health, experience fewer unplanned pregnancies and births, avoid closely spaced pregnancies and are less likely to have abortion (Borda et al, 2010). In addition,

contraception enables women to have control over their fertility which enhances their social and economic status and improves wellbeing of their families.

Some factors that contribute to a postpartum woman's vulnerability to unwanted pregnancy include return of menstruation, breastfeeding, postpartum abstinence, and uptake of contraception (Borda et al, 2010). The delayed initiation of contraceptive use until the return of menstruation might increase the risk of unwanted pregnancy. Moreover, women susceptibility to unwanted pregnancies may increase, if women do not initiate modern contraception immediately after child birth. An increase in contraceptive use during the postpartum period would substantially reduce rates of maternal and infant mortality by preventing unplanned and unwanted pregnancies and by spacing new pregnancies at least two years after the previous birth (Vernon, 2009).

The dynamics of contraceptive use among women in the postpartum period, i.e. one year period after the birth of the child, is of interest at the family planning programme level. The largest proportion of women with an unmet need for contraception is found among women in their first year after childbirth (Ross and winfrey, 2001). In Nigeria, postpartum family planning services are not well integrated into existing health services and most health delivery services do not address women's need after birth. The use of modern contraceptive methods during postpartum period translates into the prevention of unwanted pregnancy and subsequent abortion.

Studies have been carried out on the prevalence and determinants of modern contraceptive use in Nigeria but, there is dearth of information on the prevalence and determinants of modern contraceptive use among postpartum women in southwestern part of Nigeria. This study therefore examined the prevalence and determinants of modern contraceptive use among postpartum women in selected secondary health care facilities. The information will be useful to maternal and child health policy makers and for future planning and organization of family planning services.

1.4 Research Questions

1. How much do postpartum women know about MCMs?
2. What is the prevalence of uptake of MCMs among postpartum women?
3. What are the factors that influence the practice of MCMs among postpartum women?
4. What are the factors that influence intention to use MCMs among postpartum women?

1.5.1 General Objective

To determine prevalence and determinants of modern contraceptive methods within the 12-nionth postpartum.

1.5.2 Specific Objectives

1. To assess postpartum women's knowledge on modern contraceptive methods.
2. To determine prevalence of uptake of modem contraceptive methods among postpartum women.
3. To determine the factors influencing intention to use modem contraceptive methods among postpartum women.
4. To identify factors influencing the use of modern contraceptive methods among postpartum women.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of Family Planning and Modern Contraceptive Methods

Family planning is one of the 12 pillars of reproductive health. It is an important component of reproductive health and therefore is a primary health strategy in promoting maternal and child health (Umbeli et al, 2001, Akinlo et al, 2013). It improves health through adequate spacing of births and avoiding pregnancy at high risk maternal ages and parities (Rajaretnam, 1990).

Gaps in reproductive health/family planning and sexual health care account for nearly one-fifth of the worldwide burden of illnesses and premature death, and one-third of the illness and death among women of reproductive age (UNFPA, 2004, Sueoyoshi et al, 2006). Family planning has been found to be an essential means by which countries can achieve the Millennium Development Goals (MDGs), particularly goals four and five, for improved child and maternal health outcomes. The cost of averting unwanted births is miniscule compared with the costs of unwanted births at both the family and country level. Few public health interventions are as effective as family planning programs' services and contraceptive methods in reducing the mortality and morbidity of mothers and infants and have such a breadth of positive impacts (National Research Council Working Group). However, evidence in the literature suggests that family planning programs lowered the number of births in developing countries by 40% between 1995 and 2000 but the challenge is how to increase and sustain modern contraceptive use in a number of countries, especially those in sub-Saharan Africa. (Caldwell et al, 2002).

Cleland and Berstein (2006) found that many United Nations member countries, particularly those in the developed world, have strong family planning programs. This is not in the case of sub-Saharan Africa, where despite a rise in contraceptive prevalence, women continue to have unmet need for contraception (UNFPA, 2012). The International Conference on Population and Development (ICPD) defined voluntary family planning services as a fundamental human right as well as a couple's right thus the United Nation Family Planning Association (UNFPA) have stated that 1 in 3 deaths related to pregnancy

or childbirth could be avoided if all women had access to voluntary contraceptive services, that is, some 175,000 women who die each year could be saved (Dharmalingam et al, 2004).

In many developing countries (also termed low- and middle-income countries), official family planning programmes began during the 1960s with the aim of reducing high fertility, i.e. high number of births per woman (Seltzer, 2002). The resultant high fertility is associated with high levels of maternal mortality with 440 deaths per 100,000 live births (in sub-Saharan Africa, this figure reaches 920) (UNFPA, 2004), especially among the poorest communities. This indicates that there is still an unmet need for family planning and the use of modern contraceptive methods has traditionally been low in sub-Saharan Africa but, there is evidence of an increase during the past decade. (USAID, 2005).

Johns Hopkins School of Public Health studied the relationship between fertility and contraceptive use of some 100 countries surveyed in the 1990s. Results showed that in countries where contraceptive prevalence is high, the Total Fertility Rate (TFR) is low; where contraceptive prevalence is low, TFR is high (Family planning for the future, 1999). However, among the world's regions, high fertility persists only in sub-Saharan Africa with less access and motivation than in other regions. Sub-Saharan women nevertheless exercise more control over fertility now than in the past. From a high of 6.5 in 1950, total fertility for the subcontinent had declined only to 5.5 by 1999 (UNFPA, 1990) and to 5.2 by 2010 (PRB, 2010).

In recent years, various Demographic and Health Surveys (DHS) have reported that there are proportions of women of reproductive age who prefer to avoid or postpone childbearing but who are not using any method of contraception. Indeed, despite official family planning programmes being in existence for more than 40 years, the contraceptive prevalence rate (CPR) is still low in many countries (Becker et al, 2008). The optimum level for contraceptive prevalence is regarded as 80-85%. At this level, it is quite consistent with replacement level of fertility (approximately two children per woman (Ross et al, 2003) i.e. this level of CPR will ensure that a sufficient number of children will be born and survive to maintain existing population levels.

There was an increase of Contraceptive Prevalence Rate (CPR) in 1960s (9%) to 60% in 1997 then to 61.7% in 2007 for the developing world in 2007. According to the United Nations Population Division, there were huge variations in CPR within the developing countries; it was only 2.8% in Chad but 80% in Costa Rica, for example. There were also significant variations between regions- about 28% in Africa region and 74% in South America (United Nations, 2009). Contraceptive Prevalence Rate is lowest in sub-Saharan Africa, where prevalence exceeds the average for the developing world only in Zimbabwe with 45%. In only two other countries does prevalence exceed 25%- Botswana, with 35%, and Kenya, with 27%. Prevalence is below 10% in Burundi, Liberia, Mali, Niger, Sudan, and Uganda. (United Nation, 2009). The prevalence of contraceptive use has increased worldwide due to the development and introduction of modern contraceptives and also the establishment of organized family planning programs. (D'Arcanques et al, 2002). The contraceptive prevalence rate in many developing countries rose from 9% in the 1960s to 60% in 1997 (D'Arcanques et al, 2002), and this has helped in reducing the TFR of some developing countries from 6.0 in 1960 to 3.1 in 1997 (NDHS, 2003). However modern contraceptive methods have yet to gain popular acceptance in many sub-Saharan Africa countries. In many developing countries, there are about 30million women in the reproductive age group and contraceptive prevalence rate was 15% for any contraceptive method, which translates to low level of use and is a major factor that contributes to unwanted pregnancies and correlates with high maternal mortality ratio (Camp et al, 2003, Jackson et al, 2003, Singh et al, 2006).

In most developing countries surveyed by the Demographic Health Survey (DHS) in 1988, more than three-quarters of women can name at least one modern contraceptive method spontaneously, that is, without prompting. In several sub-Saharan countries, many married women are not able to name any modern family planning method after prompting. (Ross et al, 2003). During the 1990s, the self reported use of modern contraceptive among married women increased in East Africa by 1% each year to 17% by1999. In West Africa, it increased by 0.5% each year to 8% by 1999 (UNFPA, 2003). The number of women wanting to avoid pregnancy and therefore needing effective contraception increased substantially, from 716 million (54%) of 1321 million in 2003, to 827 million (57%) of 1448 million in 2008, to 867 million (57%) of 1520 million in 2012. Most of this increase (108 million) was attributable to population growth (Solter, 2002). Use of modern contraceptive methods also increased, and the overall proportion of women with unmet

need for modern methods among those wanting to avoid pregnancy decreased from 29% (210 million) in 2003, to 26% (222 million) in 2012. However, unmet need for modern contraceptives was still very high in 2012, especially in sub-Saharan Africa (53 million [60%] of 89 million), south Asia (83 million [34%] of 246 million), and Western Asia (14 million [50%] of 27 million). Moreover, a shift in the past decade away from sterilization, the most effective method, towards Injectables and barrier methods, might have led to increase in unintended pregnancies among women using modern methods (Selter, 2002)

It has been estimated that of 210 million pregnancies that occur annually worldwide, about 80 million (38%) are unplanned, 46.2 million (22%) ends in abortion while approximately 19 million end in unsafe abortion, a leading cause of maternal death and 65 million led to maternal death as a result of complication (UNFPA, 2005). Therefore investing in the contraceptive services will prevent 118 million unintended pregnancies each year, worldwide. Preventing these pregnancies in turn results in 112 million fewer annual abortions and 54 million fewer unplanned births than would otherwise occur among 603 million women (Rajaratnam et al, 2008). It also means that some 200,000 mothers do not die from pregnancy related causes and more than a million more new born survive, at least in part because babies whose mothers die in childbirth are 10 times more likely to die before age two than those whose mothers survive childbirth (Susan, 2010).

Free choice and promotion of a wide range of effective contraceptives, including responsible counseling, will improve the quality of reproductive health/family planning services (Atighetchi, 1994). This will reduce unplanned pregnancies, reduce complications, injury and the number of maternal mortality could fall by one-fourth (Moronkola et al, 2004). According to the World Health Organization in 2012, access to safe and effective modern contraceptive methods could reduce the number of maternal death, by almost a third and acceptability is crucial in averting maternal death (WHO, 2005).

2.2 Overview of Family Planning and Modern Contraceptive Methods in Nigeria

Nigeria is Africa's most populous country and has the largest economy. It has several poor reproductive health indicators and one of these is the low utilization of contraceptives. Despite sustained interventions to promote family planning during the last two decades, contraceptives are underutilized in Nigeria (NPC, 2008; Olukoya, 1987).

In the 1981-1982 Nigerian Fertility Survey (NFS), it was reported that only 34% of all women had heard of any family planning method. By 1990, when the Nigerian Demographic and Health Survey was conducted, it was reported that Nigeria had an estimated population of 88 million people; it also had a high annual rate of population growth (3.5%) and a total fertility rate of 6.0 lifetime births per woman. The proportion of women who knew of any contraceptive methods had increased by about one-third, to 46%, and the proportion of women who knew of specific methods also had grown (NDHS, 1990, FOS, 1992). In Nigeria, for example, the 1990 NDHS reported that only 44% of married women recognized any family planning method, modern or traditional, even after being prompted, while in 1999, the proportion had grown to 64% (Oye-Adeniran, 2005).

In the time past, Nigeria has relatively high levels of infant mortality (104 infant deaths per 1,000 live births) and maternal mortality (800 maternal deaths per 100,000 live births) (NDHS, 1990). In response to these and other serious demographic and health issues, the Nigerian government put into effect a national population policy in 1989 that called for a reduction in the birthrate through voluntary fertility regulation methods compatible with the nation's economic and social goals (FMOH, 1988). There is low rate of contraceptive use in Nigeria particularly in the rural areas and the northern part of the country. By 1990, this proportion had doubled to 29% (FOS 1990). During 1992-1993, an information, education and communications campaign was launched to change Nigerians' attitudes toward family planning, and thereby increase their contraceptive use. The campaign was based on evidence that family planning messages relayed through the mass media can influence contraceptive behavior. For example, in Nigeria, one-quarter of new clients attending a family planning clinic identified media campaign as their source of referral (FOS, 1992). In Nigeria, only 14% of married women reported having ever used a contraceptive method; the level of ever used has increased significantly since 1990. The proportion of Nigerian women using modern contraceptive methods rose from 3% in 1990 to 8% in 2003 (NDHS, 2003).

Contraceptive use has improved in Nigeria since the early eighties. At the time of the 1981/82 World Fertility Survey (WFS), 6.2 percent of women exposed to the risk of child bearing were using contraception and of these, only 0.7 percent was using modern (efficient) methods. By 1990, 7.5 percent of all women and 6 percent of currently married

women were using contraception. Of these 3.8 percent of all women and 3.5 percent of currently married women were using modern methods. By 1999, the use of contraception had increased substantially: 15.7 percent of all women were using any method and about 9 percent were using modern methods. Among married women, use of contraception increased between 1990 and 1999 from 6 percent to 9 percent. Also, by 1999 about 9 percent of married women were using modern methods (NDHS, 2003). However, available data indicates that Nigeria currently has one of the highest rates of maternal mortality in the world (Abe et al, 2008). It is also evident that 40% of these maternal deaths are due to complications of unsafe abortions, and abortion is a response to an unwanted pregnancy that could have been prevented by effective use of contraception (Adewale, 1998).

Despite high birth and maternal mortality rates in Nigeria, there seemed not to be keen interest in pursuing any aggressive family planning measures by the Government (Ebigbola, 1988). Population and development policies stressed economic development rather than attempts to reduce fertility. The contraceptive information and services offered to women in Nigeria are often compromised (Ozumba et al, 2005). Hence Nigeria's contraceptive prevalence rate is less than 13% (Monjok et al, 2010). The situation is further compounded by the persisting challenge of high fertility rate of about 5.8% and an annual growth rate of 2.8% in the face of a large population size of about 140 million people (Sedgh et al, 2006).

According to a 1997 survey of women in Southwestern Nigeria, at least 27% of women had ever been pregnant when they did not want to. Similarly, in a survey conducted in Southwestern and Northern Nigeria in the mid-1990, 20% of women reported ever experiencing an unwanted pregnancy (Okonofua, et al, 1999). The 2003 Demographic and Health Survey (DHS) found that 15% of the women reported unplanned live births in the previous three years. It has also been reported that about 12% of all pregnancies in Nigeria (not including those that result in spontaneous abortion) end in induced abortion and another 9% result in unplanned births (Henshaw et al. 1998).

Contraceptive use has generally been higher in the South (especially South West of Nigeria), in urban areas and among more educated women (NDHS, 2003). But an increase in contraceptive use has been experienced by most sub-groups between 1990 and 1999

For example, use of contraception increased by 23.3 percent in the rural areas and by 76.6 percent in urban areas. Similarly an increase of 5.5-16.7 percent was recorded in the various regions (NDHS, 2003).

Current use of family planning methods refers to the use of contraceptive methods at the time of the survey. Analysis of current use of family planning methods was conventionally based on women who were currently married since they were the most likely to be regularly exposed to the risk of pregnancy. Only 15% of married women were currently using any method, while 9% were using a modern method (NPC, 2004). However, to date contraception has not been well consolidated in Nigeria, with evidence from DHS data indicating that only about 13 percent of sexually active Nigerian women are currently practicing effective contraception (NPC, 2003).

The use of highly effective contraceptive methods can prevent unplanned pregnancies and ensure birth spacing. Maternal and child mortality has been the focus of international attention since the initiative of the safe motherhood two decades ago (NDHS, 2003). While maternal mortality has been at an irreducible minimum in Western Europe and most developed countries, the scourge is still ravaging in the developing countries, especially sub-saharan African countries due to low practice of modern contraceptive methods. Result from the most recent 2008 Nigeria Demographic Health Survey, CPR was estimated to be 14.2% for any contraceptive method and 10% for modern contraceptive methods including injectables, pills, Intra-Uterine Contraceptive Device (IUCD), condom etc (NPC, 2009). This translates to low level of modern contraceptive use and it is a major factor that contributes to unwanted pregnancies. In Nigeria, about 11% of pregnancies are unplanned NPC (2009) reported that overall, 4 percent of births were unwanted while 7% were mistimed (wanted later) and estimated that if all unwanted births were prevented through contraception, the total fertility rate would marginally decline to 5.3 instead of 5.7 (NPC 2004&2009).

The use of modern contraceptive methods has been reported to be very limited in the northern part of Nigeria, with only 9% of Nigerian women reported to be using these in 2003. In addition, only 3% of women from the Northeast and the Northwest reported using a modern method, compared with 23% in the Southwest (NPC, 2004). CPR is still low in Nigeria according to the report released by international women's health coalition; the

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CPR among married women aged 15-49 years was 8% for modern methods and 12% for all methods. Also, other studies have reported a similarly low adoption rate of Modern Birth Control Methods (MBCM) (Haub & Yangishila, 1992, Makinwa, 2001; PRB, 2002; UNFPA, 2007).

However, in recent years, various Demographic and Health Surveys (DHS) reported that there are proportions of women of reproductive age who prefer to avoid or postpone childbearing but who are not using any method of contraception. Despite intense programmatic efforts which include the facility-based delivery of contraceptives being complemented by the community based distribution program in order to reach more people. The community based distribution program is being implemented in many parts of Nigeria, including the North which has the greatest resistance to family planning services (NDHS, 2003). The participation of non-governmental organizations (NGOs) in the provision of family planning sensitization, education, and counseling and delivery services has increased in recent years.

In addition to meeting the already identified high unmet need for contraception in the country, these activities should be able to generate new demand for contraception. Several NGOs also offer reproductive health services to adolescents and these are expected to impact on adolescent pregnancies and fertility. The integration of family planning and maternal and child health services under the primary health care system offers more opportunities to reach potential clients. Programs have been designed and are still being designed, particularly by NGOs, to involve men in family planning activities. Fairly high levels of male participation in family planning have been documented for the Southwest and Southeast (Feyisetan et. al, 1998). These have been carried out by the Nigerian government and various non-governmental agencies to reverse the trend; there has been little evidence to suggest a systematic improvement in these indicators. Primary prevention, based on reducing the number of high risk pregnancies through effective contraception, is an important approach to resolving the problem (Bankole et al, 2006). With increasing participation of men in family planning, a major barrier to contraceptive adoption would have been addressed and an increase in contraceptive use can be expected. Furthermore, the use of the mass media to promote family planning has been found to be effective in changing contraceptive behavior in Nigeria (Bankole et al, 1999). Thus, the continued use of the mass media for IEC (Information, Education and Communication)

with respect to family planning is likely to lead to further increase in contraceptive use in the country.

2.3 Overview of Postpartum Modern Contraceptive Use Among Women

Complications associated with pregnancy and childbirth are the leading causes of death, disease, and disability among women in their reproductive period and as a result maternal health issue is one of the prime global concerns. This concern is also well acknowledged in the fifth millennium development goal (MDG) that aims to reduce infant deaths and improve maternal health while providing universal access to sexual and reproductive health services by 2015. The dynamics of the contraceptive use among women in extended postpartum period, i.e. one year period after the birth of child, is of interest at the family planning programme level, since delay of use until the return of menstruation might subject women to the risk of unwanted pregnancy. An increase in contraceptive use during the postpartum period substantially reduces the rates of maternal and infant mortality by preventing unplanned and unwanted pregnancies, and helps in spacing new pregnancies to at least two years after the previous birth (Vernon, 2009).

Postpartum Family Planning (PPFP) has long been recognized as an important component of maternal health care. Through birth spacing and prevention of high-risk and unwanted pregnancies, PPFP helps women who have recently delivered to avoid exposure to the risks of maternal death (Akinlo et al, 2013).

The 12-month interval that follows a birth includes the "postpartum period," which has been defined variously. Biologically, the postpartum period rests upon the return of menses, which ranges widely among women and across societies (Ross et al, 2001).

Postpartum is a critical period for mothers in terms of physical and physiological health. Postpartum contraceptive initiation is defined as the first contraceptive use after a birth. The duration of the period from birth to adopting a contraceptive method and from birth to pregnancy is calculated based on the beginning and ending dates of each event. Delaying the initiation of contraception during this period increases the risk of unwanted pregnancy because it is impossible to accurately predict when a woman will become fecund (Trussell et al, 1999).

Pilot trials in the mid-1960s at a network of prominent hospitals in a number of developing countries were the impetus to large-scale provision of contraceptives around the time of delivery. That activity, known as the International Postpartum Program was launched prior to the vast accumulation of national survey data that began with the World Fertility Survey; the International Postpartum Program gained worldwide attention and led to the general acceptance and widespread implementation of early provision of contraceptive information and services (Zatuchi, 1975). However, years after, little was written about the approach, since it seemed to have become a settled and normal part of obstetric services. Though analysts began to ask where things stood, and interest in the subject was somewhat reawakened at the International Postpartum Conference held in Mexico City in 1990 (Zatuchi, 1975). At about the same time, other reviews broached the question of service priorities soon after birth, arguing that contraceptive needs should not crowd out attention to other concerns of new mothers (Winkoff et al, 1991).

According to Hobcraft (1994) substantial proportions of women who give birth conceive again within nine months, and even more do so within 15 months, leading to shorter birth intervals than many women want. According to an analysis of data from 25 countries collected as part of the Demographic and Health Surveys (DHS) project, 17% of births (or one in six) were conceived within nine months of the previous birth, and 35% were conceived within 15 months of the previous birth (Hobcraft, 1994). Many of these births were not wanted nearly so soon: Only 11% of women wanted intervals of fewer than 24 months, on average, whereas 35% actually experienced them. Ross and Winfrey (2001) documented that mortality risks are elevated for both the previous child and for the newborn infant. Modern contraceptive use during the first year postpartum has the potential to significantly reduce at least some of the unintended pregnancies experienced by postpartum women (Ross et al, 2001). However, failure to plan a pregnancy can adversely affect the health of the mother, the child and the family as a whole (Moronkola et al, 2006). An analysis of data from 25 countries collected as part of the Demographic and Health Surveys (DHS) project found that mortality risks are elevated for both the previous child and for the newborn infant if birth intervals are shorter than expected (Hocrobat, 1991).

Evidence from 17 countries in three developing regions, as well as from the four geographic regions of India revealed that in each of these countries, birth intervals are substantially shorter than wanted (Rutstein et al, 2000). For India as a whole, birth

intervals would be four months longer, on average, if women had their preferences. After decades of relegation to the back line in international health priorities, Postpartum Family Planning (PPFP) has again come to the fore of international attention. For example, the London Summit on Family Planning in July 2012 emphasized international prioritization of PPFP. Major stakeholders at the meeting, including the United States Agency for International Development (USAID), the United Nations Population Fund (UNFPA), the World Bank, Save the Children, and the Bill and Melinda Gates Foundation, to mention only a few, issued a joint statement urging collective action for postpartum family planning. Also, Millennium Development Goal (MDG 5b) emphasizes universal access to reproductive health care, with the aim of increasing the contraceptive prevalence rate, increasing antenatal care coverage, and reducing unmet need for family planning, which includes unmet need among postpartum women (Arceneaux et al, 2007).

Becker and Ahmed (2001) in the DHS reproductive calendar data of Peru and Indonesia found that in both countries, postpartum contraceptive adoption is associated with the resumption of sexual activity. They also found no association between breastfeeding and the adoption of non-hormonal contraception, after controlling for the length of postpartum amenorrhea and other factors. Urbanization and social change are also changing traditional methods that women have used to control their fertility. A study examined the effect of social change on the length of postpartum sexual abstinence in three sub-Saharan African countries. Benefo (1995) found that modernization (synonymous with literacy and urbanization) adversely affected the duration of abstinence. Using data from the 1994 Zimbabwe DHS. Sambisa and Curtis (1997) reported a negative association between contraceptive use and postpartum abstinence (Sambisa et al, 1997).

2.4 Unmet Need for Postpartum Modern Contraceptive Methods

Unmet contraceptive need is the proportion of fecund women who wish to space their next birth or to limit childbearing altogether but are not using contraception (Ekabua et al, 2010).

Within Asia, 46-49% of postpartum women in Kazakhstan and Uzbekistan have an unmet need; in the other four Asian countries for which we have data, levels of unmet need vary widely, from 54% to 84%. However, in five of these six countries, only 3-4% of postpartum women want another birth within two years (Ross et al, 2001) Variation in

unmet need is great among the Latin American countries represented, from 28-29% in the high-prevalence countries of Brazil and Colombia to 79-85% in the low-prevalence countries of Guatemala and Haiti. Again, very few postpartum women in the seven Latin American countries with DHS surveys want another child within two years (1-5% (Ross et al, 2001). Ross and Wilfrey (2001) reported that 73.8% of women in the one year postpartum period had an unmet need for family planning in the Sub Sahara African region. More recently (but still using the same method of calculation), Adeyemi et al (2005) determined that 59% of their sample of Nigerian women had an unmet need for contraception at 9-10 months after delivery (Adeyemi et al, 2005).

Within regions, however, both unmet need and intention to have another child soon vary substantially by country. In Sub-Saharan Africa, the proportion of postpartum women with an unmet need mostly ranges from 61% in Zambia to 88% in Côte d'Ivoire. (The exception is Zimbabwe, where only 38% have an unmet need.) The percentage of postpartum women who want to have another child within two years generally ranges from about 2% to 11%, with Mozambique (19%) which is higher in this respect (Ross et al, 2001).The largest proportion of women with an unmet need for contraception is found among those in their first year after childbirth, concentrating efforts to reduce unmet need among these women could have a proportionally bigger impact on increasing contraceptive use than concentrating on any other group (Ross et al,2001).\

Previous research established that many postpartum women have an unmet need for contraception, and that much of unmet need falls within the general postpartum period. Unmet needs and the postpartum status overlap substantially (Ross et al, 1993). This reflects in part the failure to obtain contraceptives soon after giving birth. By 7-9 months after birth, most women become exposed to pregnancy but do not want to become pregnant again so soon, yet still have not obtained contraceptive protection (Thapa et al, 1992). Such women have experienced a return of menses, are not abstaining from intercourse and are unprotected from conception.

Unmet need is remarkably concentrated among women who have given birth within the last year or two. As the interval from the last birth lengthens, the absolute number of women with an unmet need drop dramatically. Data from the Kenya DHS, using the DHS definitions of unmet need, illustrate this pattern when women with no births are omitted, the number of married women with an unmet need is highest in the 24 months following

the last birth; only a few with a child older than 48 months have an unmet need (Ross et al, 2001, Robey et al, 1996). Women with no birth for many years tend to be in the older age-groups, the total number of women declines toward the right of the figure, as does the number wanting another child within two years (Ross et al, 2001).

Not surprisingly, every country, more than 90% of women intending to use a method also have an unmet need (Ross et al, 2001). The remainder includes the few who say they want a child within the next two years, who are classified as not being in need. On the other hand, only some women with an unmet need intend to use a method: In the case of this extended postpartum group, this proportion averages about two-thirds for all countries; it is less than that in Sub-Saharan Africa (58%) but is well above that in Latin America (78%) and the Middle East (76%) (Ross et al, 2001). This regional difference reflects a greater personal readiness in Latin America to use a method and probably the presence of more convenient contraceptive supplies and services in the program environment. (Ross et al, 2001).

With modernization, the means to control fertility have become more reliable and much safer. Access to Methods as well as motivation to limit fertility has especially increased during the last half of the twentieth century. Result of total fertility declined by almost half, from 5.0 in 1950-1955 to 2.55 in 2005-2010 worldwide, (United Nation, 2006). Globally, contraceptive prevalence increased from 54.8% (95% uncertainty interval 52.3-57.1) in 1990 to 63.3% (60.4-66.0) in 2010 and unmet need for family planning decreased from 15.4% (14.1-16.9) in 1990 to 12.3% (10.9-13.9) in 2010. Almost all sub regions, except for those where contraceptive prevalence was already high in 1990, had an increase in contraceptive prevalence and decrease in unmet need for family planning between 1990 and 2010. Although the pace of change over time varied between countries and sub regions. In 2010, 146 million (130-166million) women worldwide aged 15-49 years who were married or in a union had an unmet need for family planning, and this is projected to grow from 900million (876-922 million) in 2010 to 962 million (927-992 million) in 2015 and will increase in most developing countries (Alkema et al, 2013).

As time passes after women have given birth, the proportion using a method increases and the group of nonusers shrinks. A decline sets in for the residual proportions with an unmet need and for those intending to adopt a method. The proportion wanting a child within two

years is very small and increases very little. The overall proportions intending to use a method diminish as more of them convert to actual use. Interestingly, the proportion saying they do not intend to use remains nearly constant. Individual countries vary in these respects, and the reductions noted are less when examined as proportions of the diminishing base of nonusers.

Data from 27 surveys conducted as part of the Demographic and Health Surveys series between 1993 and 1996, which were analyzed to assess intentions to practice contraception and unmet need for it, both in the first year after birth. Data from 27 surveys conducted as part of the Demographic and Health Surveys series between 1993 and 1996 are analyzed to assess intentions to practice contraception and unmet need for it, both in the first year after birth revealed that across the 27 countries, there is much unsatisfied interest in, and unmet need for contraception. Developing country averages indicate that two-thirds of women who are within one year of their last birth have an unmet need for contraception, and nearly 40% say they plan to use a method in the next 12 months but are not currently doing so. Moreover, of all unmet need, on average nearly two-fifths falls among women who have given birth within the past year. Similarly, nearly two in five women intending to use a method are within a year of their last birth.

Providing access to contraception is also vital in reducing unmet need which is highest in the developing world with an estimated 105-122 million married women having an unmet need annually (Ross et al, 2002). Unmet need for family planning has also been shown to be high within a 1-year period following delivery (ketting, 1994. Casterline et al, 2000, Ross et al, 2001). In addition, levels of unmet need remain high among women who are poor, less educated, and residents of rural areas (Westoff, 2006, Ashford, 2003).

2.5 Awareness of Postpartum Modern Contraceptive Methods

Promoting family planning on radio or television can be an important means of raising awareness, improving knowledge and stimulating use of modern contraceptive methods (Feyisetan and Ainsworth, 1984; Olaleye and Bankole 1994; Parr 2002). Mass media is an important source of information on family planning. Radio is the most frequent source of family planning messages: 40 percent of women heard about family planning on radio while 56 percent of men heard about family planning message on radio. However, more than half of women (56 percent) and 41 percent men were not exposed to family planning

messages from a mass media source. (NPC, 2004) Although there have been so many family planning programmes (disseminated through the media and through some other sources) in Nigeria, the level of use of contraceptives, especially of modern contraceptive methods is still very low. Women must be aware of the methods available, must know where supplies of these methods can be obtained and they must know how to use the method they choose (Chandhick et al, 2003).

2.6 Knowledge of Modern Contraceptive Methods Among Women

While showing a marked improvement of over 44% in 1990, knowledge of contraception remains low among women; just 68% knew at least one modern method of family planning (FMOH, 2003). About eight in ten women and nine in ten men knew at least one modern method of family planning. The pill, injectables, and the male condom were the most widely known modern methods among both women and men (NPC, 2004).The 2008 Nigerian Demographic survey revealed that the knowledge of any contraceptive method is widespread in Nigeria, with 72 percent of all women and 90 percent of all men knowing at least one method of contraception. Modern methods are more widely known than traditional methods; 71 percent of all women know of a modern method while only 36 percent know a traditional method. Among modern methods for women, the male condom is the most commonly known method (58 percent). Foam/jelly and the diaphragm are the least known modern methods, 6 percent for both. Sexually active unmarried women are more likely to know of a contraceptive method than currently married women (95 percent compared with 68 percent, respectively). Among traditional methods, 25% of all women knew withdrawal and rhythm (NDHS, 2008). Younger women age 15-19 and women living in the North West are least likely to know of a contraceptive method (43 and 45 percent, respectively). Similarly, knowledge of contraceptive methods is lowest among women with no education and those in the lowest wealth quintile (45 and 41 percent, respectively) (NDHS, 2008).

Several studies in the six geopolitical zones in Nigeria indicate that contraceptive knowledge and awareness, especially among women was very high. In one study done in Ilorin (Abiodun et al, 2005) stated that the methods mostly known by respondents were the condom (69.0%), the oral contraceptive pill (OCP, 38.8%), IUCD (29%), and periodic abstinence (32.9%), with most respondents being able to name at least one method of contraception. Unfortunately, all of the studies that showed good knowledge and

awareness did not show a strong prevalence of use of contraception (Oye-Adeniran et al,2005, Amazigo et al,1997, Akpani et al, 2000). Instead, these studies showed a high level of sexual activity corresponding with a low contraceptive prevalence. Despite the provision of information about contraceptive methods during antenatal and postnatal cares, most women resume sexual intercourse within 6 months postpartum without the use of MCM in many countries (Borda et al, 2010, Nyengidiki et al, 2008).

2.7 Prevalence of Postpartum Modern Contraceptive Methods

The Contraceptive Prevalence Rate (CPR) is the proportion of women of reproductive ages that uses modern contraceptive methods differs across Sub-Saharan African countries (UNDP, 2009). It ranges from the lowest 1.2% in Somalia to the highest 60.3% in South Africa. Southern African countries like South Africa and Zimbabwe have the highest uptake of modern contraceptive, followed by countries from East Africa with Kenya at 31.5% leading the sub-region. Western and Central African countries reported very low rates of family planning uptake. Low contraceptive prevalence rates in the world can be observed in this sub-region with Chad with at 1.7%, Niger 5%, Nigeria 9.1% and Central African Republic with 8.6% (UNDP, 2009). It is imperative to study factors that predict modern contraceptive use in one of these countries with low contraceptive prevalence.

The prevalence of contraceptive use has increased worldwide due to the development and introduction of modern contraceptives and the establishment of organized family planning programs (D'Arcanques et al, 2002). The contraceptive prevalence rate in many developing countries rose from 9% in the 1960 to 60% in 1997 (D'Arcanques et al, 2002), this has helped in reducing the total fertility rate of some developing countries (the lifetime average number of children per woman) from 6.0 in 1960 to 3.1 in 1997 (NPC, 2004). The proportion of Nigerian women using modern contraceptive methods rose from 3% in 1990 to 8% in 2003 (NPC, 2004). The low rate of contraceptive use in Nigeria results in high fertility rates, particularly in the rural areas and the northern part of the country. This high fertility rate accounts for Nigeria's high maternal, infant, and neonatal mortalities, and the use of modern contraceptive methods has been reported to be very limited in the northern part of Nigeria, with only 9% of Nigerian women reported to be using modern contraceptive methods in 2003 (NPC, 2004). These data correlate well with the high fertility rate in the northern part of the country. According to the 2003 Nigeria Demographic and Health Survey, the country's overall fertility rate was 7.0 children per

woman in the northeast and 6.7 children per woman in the northwest, compared with only 4.1 in the southwest (NPC, 2004).

The prevalence of exclusive breast feeding has been discouraging, failure to use postpartum contraception may also lead to early repeated pregnancies, with attendant risks to maternal health. In the United States, the repeat pregnancy rate was 14 percent at one year and 35 percent at two years (Stevens- Simon et al, 2001). Unintended pregnancies within a short interval often end in abortion. Half of all pregnancies in the United States were unintended and 46 percent of those pregnancies resulted in live births and 54 percent in induced abortion (Henshaw, 1998). In Finland, pregnancies at eight months postpartum were more likely to end in abortion. Moreover, the shorter the interval to the next pregnancy, the pregnancy was more likely to end in abortion (vikat et al, 2002). In Vietnam, the contraceptive prevalence rate is relatively high with 79 percent of married couple using any contraceptive method and 57 percent using modern methods, two third of pregnancy terminations occur among women who use contraceptives at the time of becoming pregnant. Indeed, one quarter of the births is unplanned (Committee for population, family and children, 2003).

Nigeria currently has a population of over 140 million and an annual growth rate of 3.2% (NPC, 2007). Nigeria's fertility rate dropped slightly from 6.0 to 5.7 between 1990 and 2003 (NPC, 2004). However, contraceptive prevalence rate (CPR) is still very low in Nigeria with only 11.6% of women of reproductive age (WRA) using modern family planning methods (FMOH, 2006). Contraceptive prevalence is highest in the southern parts of the country, but relatively low elsewhere. CPR differs considerably between urban and rural areas with 18% in the urban area compared with 8% in the rural areas (FMOH, 2006). Unmet need for family planning stands at 13.6% with a higher rate in rural areas (14.2%) than in urban (12.5%). Unmet need is also highest among older women and women with one to five children. Only about half of women with an unmet need intend to use a contraceptive method in the future (NPC, 2006).

2.8 Factors Influencing Postpartum Contraception

Ross and Winfrey (2001) established that by 7-9 months after delivery, most postpartum women are exposed to pregnancy, yet have not obtained contraceptives. Some of these women would have experienced a return of menses, are sexually active and are

unprotected from conception, which increases exposure to the risk of unintended pregnancy and translates into unmet need for postpartum family planning. Yet a number of studies have revealed that most of the postpartum mothers are not aware of the factors associated with fertility return and do not think they are at risk of pregnancy during the first year after giving birth. Consequently, these mothers are reluctant to use family planning or are using unreliable methods associated with high failure rate such as withdrawal and condom (Salway and Nurani, 1998; Shaaban and Glasier, 2008; Rojnik et al, 1995).

The factors affecting postpartum contraception include:

Personal characteristics, attitudinal and intra- personal characteristics, mother's health status, providers, husband/partner and close relatives.

Personal characteristics

The influences of demographic variable such as age, parity, ethnicity and education, level of mother were reported in some studies (Techrani et al, 2001, Romeo-Gutierrez et al, 2003, Rojnik et al, 1995). A case control study in Slovenia found that parity and education were risks factors for early postpartum contraception terminated by induced abortion as a backup procedure for contraceptive failure when they had already fulfilled their desired family size. Parity may affect the choice of decision when to initiate contraception during postpartum and whether an early postpartum pregnancy will be carried to term or not (Rojnik et al, 1995). In a survey of 462 American women age 18 years or younger at delivery and 6 months postpartum, school enrolment and not having failed a grade in school were associated with contraceptive use (Berenson et al, 1997).

However in Mexico, women's level of education significantly affected contraceptive acceptance but not other variables such as marital status, religion, husband's occupation, husband's education, monthly family income and women's occupation (Romeo-Gutierrez et al, 2003).

Attitudinal and intra-personal characteristics

It has been reported that the reasons given for not using contraceptives include health problems, lack of access to contraception (Gadou et al, 1999). Previous experiences with maternal health services are also influential factors of contraception. Attendance at postpartum visit and having had a prior abortion could influence contraception decision

(Berenson et al, 1997). While previous familiarities with contraceptive methods could affect contraceptive use (Techrani et al, 2001). A study in Germany found that perceived accuracy of observation to identify the fertile time and acceptance of own body were independently associated with both interest in and choicenjh to use natural family planning (MIkolajczyk et al, 2003). Belief that pregnancy is likely without birth control and the adolescent's desire to wait at least 2 years before having another child could reliably predict the use of contraception at the last intercourse (Berenson et al, 1997).

In Bangladesh, women are primarily concerned with their own and their new born child's wellbeing in the period following childbirth. In addition, women are aware of a diminished risk of pregnancy during the period of postpartum amenorrhoea. These perceptions together with the belief that modern methods of contraception are "strong" and potentially damaging to health mean that the majority of women are reluctant to adopt family planning methods soon after birth, despite a desire to avoid closely spaced pregnancies (Salway et al, 1998).

In Mexico, reasons for accepting contraceptives included the definitive desire for no more children (17 percent) and satisfaction with previous contraceptive methods (21.5 percent) (Romeo-Gutierrez et al, 2003). The mother's desire to wait at least two years before having another child was also an important factor (Berenson et al, 1997). A study in United States found 80 percent of women surveyed were using contraception prior to pregnancy but nearly 20 percent were not satisfied with the method used. Dissatisfaction with their method was more likely among women who indicated a desire to change their contraceptive after delivery (Cwaik et al, 2004).

Health status of mothers

In Mexico, caesarean section was predictive for contraceptive acceptance (Romeo-Gutierrez et al, 2003). Moreover, time since menses resumption and number of menstrual bleedings were important factors for postpartum contraceptive use (Rojnik et al, 1995).Among adolescent mothers commencing birth control six weeks after delivery, 58 percent of oral contraceptive users and 93 percent of depot medroxyprogesterone acetate users cited side effects as the reason for contraceptive discontinuation (O' Dell et al, 1998). Side effects were also evident for the inconsistent use of contraception among adolescents in another study conducted in the United States (Templeman et al, 2000).

Influence of providers

The prenatal and postpartum periods afford good opportunities to influence contraceptive behavior since women are in close contact with the health care system during pregnancy and the first months of the baby's life (Vikat et al, 2002). Several studies have shown that women want to discuss contraception with health providers during antenatal and also after hospital discharge (Ozvaris et al, 1997)

In Scotland, obstetricians appeared to have little interest in the subject and only 50 percent of mothers left the hospital with a supply of contraceptives. Up to 84 percent of the women discussed the issue with a midwife of the postnatal ward but discussion was often felt to be brief, limited and frequently held at the time of leaving the hospital (Smith et al, 2002). Postnatal ward is an inappropriate setting for contraceptive counseling because mothers are discharged home after only three or four days and during their stay, are anxious to establish infant feeding and to learn to care for the new baby. Nevertheless, contraception is probably the last thing on a new mother's mind during the first few days after delivery. Yet leaving the discussion until later in the postpartum period may mean missing the opportunity altogether (Smith et al, 2002).

Midwives are good at these aspects of postnatal care but receive only limited training in family planning. As a consequence when giving advice to mothers on contraception, they universally denied the contraceptive effects of breast feeding (Glasier et al, 1996). According to World Health Organization, in many countries, counseling on contraception also ignores the lactational amenorrhea method (WHO, 1998).

Counseling plays a crucial role in improving postpartum contraception practice. However for women in developing countries, postpartum care frequently does not include counseling on family planning. Consequently the risk of poorly timed or unwanted pregnancies will increase if women are unable to obtain effective contraception (Rivera et al, 2002). Even in developed countries such as Finland, if health care professionals assume that women in a certain age group know how to take care of contraception themselves such women may receive less counseling about family planning (Vikat et al, 2002).

Postpartum reproductive care should pay attention not only to family planning but also to other aspects of maternal and child health through immunization and other services.

Combined services after the opportunity for cost reduction and improved quality of care since the reproductive health needs of their infants (Hight-Laukaran et al, 1996). Similarly, Winikoff and Mensch (1991) suggested giving combined advice on breastfeeding and contraception (Winikoff et al, 1991).

Influence of the husband/ partner and close relatives

Husbands / partner's perception and attitude towards contraception have an important role in determining the contraceptive behavior of the women during the postpartum period. A study in Mexico (Romeo- Gutierrez et al, 2003) found that the reasons for rejecting contraceptives were related directly to the opinion of the husband.

In rural Turkey, 26.8 percent of men did not want their wives to use an Intra Uterine Device and 31.7 percent did not agree with women using contraceptive pills. Men had very poor information about family planning, only 17.5 percent of men in the study group had contacted a doctor or health facilities to obtain information. (Mistik et al, 2003). In Iran, husband's level of education could influence contraceptive use (Techrani et al, 2001). Sexuality and contraception after delivery should be discussed when the mother or both parents visit the maternity clinic (Vikat et al, 2002). In fact, involving husband in family planning counseling sessions had led to joint decisions being made and encouraged women's use of contraception (Soliman, 1999).

2.9 Practice of modern contraceptive methods

This low level of use, in spite of various programmes points to the need for more research in that arena and understanding the determinants of contraceptive use in Nigeria is still very crucial to the achievement of population and development goals. Lack of adequate information and ignorance are key factors militating against family planning practice in Nigeria (Adinma et al, 2005). Many potential informational barriers exist to contraceptive use.There is a shift in the methods used as breastfeeding diminishes; menstruation returns and sexual relations resume (Ross et al, 2001).

Moreover, substantial proportions of women who give birth conceive again within nine months, and even more do so within 15 months, leading to shorter birth intervals than many women want. According to an analysis of data from 25 countries collected as part of the Demographic and Health Surveys (DHS) project, 17% of births (or one in six) were

conceived within nine months of the previous birth, and 35% were conceived within 15 months of the previous birth (Hobcraft, 1994). Many of these births were not wanted nearly so soon: Only 11% of women wanted intervals of fewer than 24 months. on average, whereas 35% actually experienced them. That research also documented that mortality risks are elevated for both the previous child and for the newborn infant. (Ross et al, 2001).

Part of the reasons for the poor use of contraception in Nigeria: include the persisting pronatalist culture of the people, religious preaching which discourage the use of contraception, poor availability and distribution of contraceptives and women's fear of contraceptive side effects. (Orji et al, 2002, Ozumba et al, 2005). In particular, the perception that contraception could lead to infertility in later life is one reason that Nigerian women have always proffered for not accepting effective contraception (Otoide et al, 2001).

2.10 Women Intention to Use Modern Contraceptive Methods

The use of contraceptive is inevitable for those who are in their reproductive ages whose intention is to postpone a birth or who do not want any more children, and those who are not ready for birth at all. However, those who are faced with a contraceptive need may choose from a variety of contraceptive method and may as well decide not to use a method (Rindfuss et al, 1989).For all countries, nearly 40% of women in the extended postpartum period intend to use a method within the next year (Rose and winfrey, 2001). The regional averages differ very little, ranging only from 35% in the Middle East to 41% in Sub-Saharan Africa and 44.3% in Latin America. In contrast, the proportions with an unmet need differ appreciably by region. However, beneath these regional averages are large country variations, so the individual countries warrant particular attention. For Asia, in Uzbekistan only 20% of postpartum women intend to use a method in the next year, but in Bangladesh 58% plan to do so (Ross et al, 2001). A 20-point range is seen among the countries of Sub-Saharan Africa and of Latin America. Over the four quarters of the first year postpartum, the proportion of women using a contraceptive rises, reducing the base of nonusers. In Benin, 37.1% postpartum women, 30.7% in Cote dIvore, 40.2% in Ghana, 50.8% in Kenya, 42.2% in Mali, 44.1% in Uganda had intention to use contraceptive at 12 month postpartum (Stephenson et al, 2007).

Intention to use and not to use contraceptive method could be positively influenced by socio economic and demographic variables such as age, education, place of residence and wealth index (Akingbola et al, 2010) other factors which have been identified to be responsible for low contraceptive prevalence rate during postpartum period include cultural issues, literacy, timing of resuming sexual activity after delivery, infant feeding choice, ignorance, low educational level and desire to have large family size, perceived side effect and health risk associated with the use and lack of access to information place women at risk of unintended pregnancies (Cwaik, et al, 1996, kennedy, 1996,FHI, 1998). Delaying the initiation of contraception during the postpartum period can put women at risk of unwanted pregnancies and majority has no intention to use postpartum contraception.

Analysis of 27 Demographic and Health Surveys by Ross and Winfrey (2001) found that the unmet need for contraception during the first year in sub Saharan Africa was 74 percent, of which about three quarter is for spacing births. Only 18 percent of postpartum mothers were using a method and only 5 percent reported to have the intention of conceiving again. In

Nigeria and India, the unmet need for postpartum family planning is alarmingly high at 62 and 73 percent respectively, and only one fifth of the postpartum mothers use family planning during the first year after birth (Borda and Winfrey, 2006; Borda, 2008).

2.11 Determinants of Modern Contraceptive Methods

A Nigerian study interviewed 1,540 respondents from the three main regions namely: Northern, Western, and Eastern on their contraceptive use. The analysis shows that different factors significantly affect the choice of contraceptive use in the different regions. Result showed that there were regional variations on factors that influence contraceptive use. Contraceptive use is less practiced in the North compared to other regions. According to the Odimegwu et al, 1997, the reason for this disparity is low level of education and awareness in the north and secondly is the regions religious background. Other determinants are.

Age: It is important to know that age also influences the method of contraceptive use. Younger couple often opts for the spacing methods if at all they have to use modern

contraceptives while the older men go for methods like sterilization as they are more likely to have attained their desired fertility (Ringheim, 1993).

Marital status: There have been mixed findings on the association between marital status and contraceptive use. A cross sectional study among women in a community in Nigeria showed a positive association between marital status of women and contraceptive use (Oye-Adeniran et al, 2006). Ankomah et al 2011 found out that marital status was also a significant predictor of contraceptive use in a study carried out in Nigeria (Ankomah et al, 2011).

Religious: A body evidences exist which demonstrates that use of contraceptives is associated with religious and belief of individuals (Warwick, 1986; Coale, 1986; Lesthaeghe, 1980). Religious affiliations affect customs and practices of individuals regarding general norms which include modern contraceptive use. The belief system that is propagated by a specific religion influences even the contraceptive method to be used. For instance, sterilization is not an acceptable contraceptive method among Muslims and Catholics (Ringheim, 1993). According to Warwick, most times religious values create an important barrier for family planning practices (Warwick, 1986) and a study by Jones and Dreweke found that some individuals view the use of contraceptives as unacceptable due to their religious belief. For example contraceptive use is strongly opposed to by the doctrines of the Catholic Church and some other socially conservative religious organizations including Islamic fundamentalist (Jones and Dreweke, 2011). There have been mixed reports on how religion affects contraceptive use in a population depending on the religious composition of that particular population.

Education: Educated and working women are presumed to have closer conjugal tie with their husbands compared to uneducated and unemployed women (Coombs et al, 1979, Okojie, 2000).Female education has been seen as a key determinant of contraceptive use (NPC and ORC Macro 2004). Better-educated women are argued to be more willing to engage in innovative behavior than the less educated women, and in many Third World contexts, the use of contraception remains innovative (Caldwell 1979; Dyson and Moore 1983). Better educated women are also argued to have more knowledge of contraceptive methods or of how to acquire them than the less educated women because of their literacy, greater familiarity with modern institutions, and greater likelihood of rejecting a fatalistic attitude towards life. There is good evidence that for whatever reason, women's education

does indeed promote the use of contraception in most developing countries outside of tropical Africa (Cochranel979, Koc, 2000). Koc 2000 found a positive association between the educational level of both spouses and the use of contraceptive methods in Turkey. After all individual, cultural, fertility and contextual variables were controlled. a woman's education was found to be a stronger predictor of method use and method choice than that of her husband (Koc, 2000).

Female autonomy: In the context of family planning, the concept of female autonomy is generally associated with a variety of element that range from delayed marriage, smaller families, access to accurate information, the ability of married women to discuss freely about their family planning needs with their spouses and other members of the household and the community and being able to make independent decision on fertility regulation including going out of living boundaries to access any of the contraceptive methods (Germaine et al,1995). Women involvement in income- earning activities is the significant predictors of contraceptive use in the study area (Shrestha, 2000)

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The woman's decision to adopt modern contraceptive methods was strongly influenced by how she perceived other community members would judge her actions. Previous studies also showed that women may choose to adopt family planning or indeed choose a particular method as a result of the methods adopted by those in the community (Potter, 1999).

Return of menses: On average, women in Latin America and Asia resume menstruation much earlier than do women in Sub-Saharan Africa. The regional averages are low and similar at 0-3 months postpartum, but they then rise sharply (Ross et al, 2001). The increase among women in Asia and Latin America is nearly double that for Sub-Saharan Africa, although by one year only about 60% of women in Asia and Latin America have experienced return of menses. The slow return of menses in Sub-Saharan Africa, reflecting the extended practice of breastfeeding there, partially explains the relatively small number of postpartum women there who use contraceptives. Lack of services and other factors also contribute to the low prevalence of use.

Number of living children: Number of living children a person has can have an influence on modern contraceptive use because there is a tendency that the desire for additional

children may decrease as number of living children increases. This assumption is based on the fact that economically, world economy is not improving and the cost of raising children in recent times is higher than before although, it is a general belief that men in Sub-Saharan Africa are lovers of children based on different reasons which is mostly culturalA study carried out on women in Orissa found that one –third of the women with one child used a method of contraception. That suggests that the use of contraceptives at lower parities is low and therefore concludes that there is an association between the number of living children and contraceptive use. Furthermore, the modern contraceptive uptake increases with number of living children (Sahoo, 2007).

2.12 Modern Contraceptive Methods

Modern contraceptive methods are devices (drugs, chemical or surgical procedure) used primarily for prevention of conception which could be for spacing or delaying next pregnancy or stopping reproduction (Dawn, 2009). The modern contraceptive methods are sterilization, hormonal implant, Injectables, Intra Uterine Contraceptive Device (IUCD), male condom, female condom, Emergency contraceptive, Oral contraceptive pills, vasectomy, tubal ligation, Diaphragm (Dawn, 2009).

Aims and objectives of adopting modern contraceptive methods

It encourages good building up of the community and family health, promotes the health of the mother and the children, reduces the high incidence of infant and maternal morbidity and mortality rates, reduces or eradicates the incidence of STDs, controls the population of the country and makes everybody healthy, to prepare boys and girls for puberty age of child bearing. It helps the couples in spacing their children to make them have better and brighter future, enables parents give their children quality parental care and makes the take-home-pay commensurable to the size of the family etc.

Benefits of using modern contraceptive methods

It provides better health, good clothing, good feeding, better education and housing, better condition of living, makes the family to be happy, encourages devotion of time to one another in the family and promotes effective sharing of the available resources, no matter how meager it may be. It promotes effective monitoring and modification of way ward behaviors in the children, helps in reducing juvenile delinquency rates in the family and helps in building a happy, healthy and wealthy nation etc.

Types of contraceptive methods

There are many methods of contraceptive, each with its advantages and disadvantages.

These contraceptive methods are grouped into the following categories/classes:

(1) Traditional Methods consist of:

Total abstinence method, withdrawal method and natural Family Planning.

(2) Modern contraceptive methods

Male condom, female condom (femidom), vaginal spermicides, diaphragm, Oral contraceptive pills, injectables, hormonal implants, emergency contraceptives Intra uterine contraceptive device (IUCD), tubal ligation and vasectomy

Table 1: Descriptions, advantages and disadvantages of traditional methods

TRADITIONAL METHODS	DESCRIPTION	ADVANTAGES	DISADVANTAGES
TOTAL ABSTINENCE	keeping away from having sexual intercourse when a decision of not having a child has been reach by the couple	It is the only completely safe methods It costs nothing and easy to obtain	It can be difficult to be implemented
WITHDRAWAL METHOD	It involves no artificial devices or chemical It prevents fertilization by preventing contact between sperm and the egg. It involves withdrawal the penis from the vaginal at the point of ejaculation	It does not require the use of any devices or equipment No introduction of chemical to the body It is available in any situation	Withdrawal of penis requires perfect timing and self- control on the part of the male. Semen and sperm are released into the vagina in most sexual intercourse.
NATURAL FAMILY PLANNING Rhythm method The basal body temperature (BBT) method, ovulation billing method, symptom-thermal method use of cycle bead	It involves timing and recording of the menstrual cycle of female	It increases the user's knowledge of reproduc tive physiology. It enhances awareness and self-reliance. It has no adverse side effects It cost effective, no fuss and no mess	No perfection against STIs. Male partner cooperation is difficult It involves careful monitoring by the woman for several months. The information may not be accurate.

SOURCE: WHO,2008

Table 2: Description, advantages and disadvantages of modern methods

MODERN METHODS	DESCRIPTION	ADVANTAGES	DISADVANTAGES
MALE CONDOM	It involves fitting the condom over male's penis. It is rolled onto erect penis before sexual intercourse. It catches and holds the semen released during the sexual intercourse.	Easily and widely available without prescription. Generally in expensive. It provides protection against STIs It helps user maintain an erection longer. It prevents pre-mature ejaculation It is hygienic.	It reduces sensitivity. Decreases pleasure. It interrupts foreplay to put on the condom. In rare cases, allergic reaction occurs. Break-age of condom may occur. Sizes not always suitable. It may slip off
FEMALE CONDOM	It is a thin, loose, polyure-thame(plastic) Sheath with two flexible plastic rings on either end. It provides a physical barrier that lines the entire vagina and part of the external vulva. It is inserted into the vagina before sexual intercourse	It protects against STIs It does not alter the woman's hormonal patterns No systematic side effects	Some of them are expensive. It is bulky, noisy and unattractive It causes vaginal discomfort It is not readily available May require additional support to keep in place
	It is one of the barrier methods. It involves inserting a rubber cap into the vaginal shortly before the sexual intercourse. It covers the entrance of the womb so as to prevent the sperm from entering the uterus. It must be left in place at least 6 hours after sexual intercourse	It prevents pregnancy	It offers very little protection against STIs. It is complicated to be used It may shift during sexual intercourse. There may be spillage of sperm on the process of removal

MODERN METHODS	DESCRIPTION	ADVANTAGES	DISADVANTAGES
ORAL CONTRACEPTIVE PILL	This method purely involves the use of pills which prevent pregnancy by suppressing ovulation through the combined action of oestrogen and progestin	It offers continuous protection against STIs. It is highly effective. It regulates monthly periods. It has protective effects against pelvic inflammatory diseases. Protects against ovarian and endometrial cancer. Decreases risks of breast tumor	Pills must be taken daily. Pills may be expensive. In some cases, pills may be expensive. In some cases, pills produce nausea and vomiting. Depression and other mood changes. There is risk of complications with cardio-vascular diseases. Decreased libido in some women. Provides no protection against STIs. Leads to weight gain. Decreases lubrication (dryness)
INJECTABLES	It is given to female in form of an injection. It works like the pill by suppressing ovulation. It contains progestin hormone which alters the living of the uterus so that it cannot accept a fertilized egg. It makes sperm difficult to penetrate and altering the ability of the fallopian tubes to transport the ovum to the uterus	It provides continuous and long term protection. It is highly effective it does not interfere with spontaneity of sexual intercourse. It has lower failure rate than other contraceptive methods. It helps with menstrual problems it reduces the incidences of ovarian cancer, anaemia, ectopic pregnancy, breast lumps	It does not protect against STIs/HIV. Menstruation becomes light and irregular. It stops menstruation in many women. Weight gain is common. It requires constant clinic visits. It cannot be reversed. some women find it difficult to get pregnancy after discontinuation of use. It is difficult to determine when the drug wears off.

MODERN METHODS	DESCRIPTION	ADVANTAGES	DISADVANTAGES
HORMONAL IMPLANTS	Norplant is the brand name for a set of tiny, silicon rubber tubes, each containing a manufactured form of a single hormone called progesterone. They are administered by a doctor or specially trained nurse just under the skin on the inside of woman's upper arm. They become invisible after insertion	It provides long lasting and continuous protection against pregnancy. It requires no attention after insertion. It does not interfere with intercourse	It produces irregular bleeding. It requires minor surgery for insertion and removal. It produces unknown long term risks. It does not provide protection against STIs
EMERGENCY CONTRACEPTION	These are used during problematic situations that are emergency. A woman may have missed too many oral contraceptive pills, when condom brakes, the woman was raped or simply did not think of having sexual intercourse. This method is used to protect unplanned or unwanted pregnancy	It is easy to use. It has minimal medical risks. Out of 100 women using this method. 98% of them will not be pregnant. 2% have the chances of being pregnant.	Nausea and vomiting is common. It does not provide protection against STIs/HIV.

MODERN METHOD	DESCRIPTION	ADVANTAGES	DISADVANTAGES
INTRA-UTERINE CONTRACEPTIVE DEVICES (IUCD)	Examples of this method includes; Henley's loop or copper-T. It is a small, flexible plastic device which is inserted into the womb by a doctor. It is a little piece of soft plastic, usually with a tiny, nylon tail thread attached to it. It can be lest in the woman's uterus for 1-8 years. It immobilizes sperm or its movement to the fallopian tubes or irritating the wall of the womb preventing the fertilized egg from attaching to the wall of the uterine	It provides long lasting and continuous protection from pregnancy. It is inexpensive. It does not involve insertion during menstrual period. Out of 100 women who use IUCD method for one year, only 1-2 women is likely to become pregnant	Expulsion of the device by 2-10% of the users in the first year of use. It requires medical examination. Not advisable for women who have not had children. There are increased risks of pelvic infections. Risk of increased menstrual bleeding. Increased risk of ectopic pregnancy. Uncomfortability during sexual intercourse. Does not protect against STIs
TUBAL LIGATION	It is an operation on women in which the fallopian tubes are cut and tied off so that sperm can longer reach the egg let alone fertilizing it. It sterilizes the woman. It involves surgery	It is safe. It is highly effective. It has no long term side effects	It leads to permanent sterilization. The procedure requires highly skilled personnel. It does not protect against STIs/HIV
VASECTOMY	It is safe surgical procedure for men. It involves cutting and tying of the tubes through which sperms travels during sexual intercourse	It is safe. It is highly effective. It is 100% against pregnancy. It is permanent	Permanent sterilization. It does not provide protection against STIs/HIV. Psychologically induces sexual dysfunction in man

SOURCE: WHO, 2008

CHAPTER THREE

METHODOLOGY

3.1 Study Area

The study was carried out in Ibadan metropolis. Ibadan is the capital and administrative headquarters of Oyo state located in the southwest region of Nigeria.According to the 2006 census, the state has a population of about 5,591,589 (NPC, 2009).

Ibadan is reputed to be the largest indigenous city in Africa, the third largest city in Nigeria by population (after Lagos and Kano) and the largest in geographical area. Ibadan is made up of 11 Local Government Areas (five urban and six rural LGAs). The sites for study were located in Ibadan metropolis which had five Local Governments Areas namely Ibadan North, Ibadan North East, Ibadan North West, Ibadan South West, Ibadan South East. The principal inhabitants of the city are the Yorubas. Out of the total area of the city only 1,190sqml (3,080km^2) (or 34.9% of the land area) is urban consisting of residential areas, public buildings, markets, industrial and commercial, educational institutions, amenities and open space. The women in Ibadan metropolis are predominantly traders.

Family planning services are provided at both primary, secondary health facilities as well as tertiary institutions in the state. Contraceptive prevalence rate (CPR) for Ibadan is 22%. (NURHI, 2012).Nigeria Demographic Health Survey 2008 revealed that 76% of the urban poor do not use any methods of the contraception while only 20% use modern methods in Ibadan.

In the sociocultural context, there is a strong and rigid culture of patriarchy in the state even though the female adult literacy rate for the state is 60.9% (UNESCO, 2012). Most of the women in the region are employed (NPC, 2009). Although, the state government has adopted many reproductive health policies, the implementation of these policies has been a major challenge. This also affects family planning which is not seen as a critical component of maternal health in the state. This is evident in the lack of a specific budget line and non release of funds for FP programmes and services at all level of intervention in the state (NURHI, 2012)

3.2 Study sites

The study was conducted in Adeoyo Maternity Teaching Hospital, Oni and Son Memorial Hospital and Eleta Catholic Hospital.

3.2.1 Adeoyo Maternity Hospital

The Adeoyo maternity hospital is a secondary level health facility located in Ibadan North Local Government area of Oyo state. It is the oldest maternity hospital in Nigeria dating from 1927 and patronized mainly by middle and low class clientele. It also serves as a referral centre for many primary health centers and private clinics within Ibadan and its environs. There are 18 departments that span the entire field of medicine including Accident and Emergency, pediatric department, Obsteristric and Gyanecology, physiotherapy, laboratory, nursing department, medical records, x-ray, family planning etc. Adeoyo maternity hospital has 510 staff strength, 4 consultants, 11resident doctors, 201 nurses, 4 house officers, 8 administrative staff and 57 ward assistants/ maids. Immunization clinic operates everyday and manages about 80 patients per clinic days with an average of 40 new cases.

3.2.2 Oni and Son Memorials Hospital

Oni and Son Memorial hospital is a secondary level health facility located in Ibadan South East Local Government area of Oyo state. It is a maternity hospital established 10th May. 1985 and patronized mainly by middle and low class clientele. It also serves as a referral centre for many primary health centers and private clinics within Ibadan and its environs. The hospital was established to meet people demand for child health care, to relieve congestion of excessive patronage of patients in Adeoyo maternity hospital.

There are 15 departments that span the entire field of medicine including the Department of family planning, X-ray, laboratory, clinical services, pharmacy, medical records. physiotherapy and nursing services. The hospital has staff strength of 173 people, 1 consultant, 21 resident doctors including house officers, 79 nurses, five administrative staff and 10 ward assistants/maid. The immunization clinic manages about 30–50 patients per clinic day with an average of 30 new cases per day. It operates four days in a week from Mondays to Thurdays for immunization services. Patients are given health education management of diarrhea, malaria and personal hygiene.

3.2.3 Saint Mary's Catholic Hospital, Eleta

Saint Mary's catholic hospital is a secondary level health facility located in Ibadan South West local government area of Oyo state. It was founded in 1964; the purpose of its establishment is provision of highest quality of holistic and comprehensive care at affordable price for all patients. It is patronized mainly by middle and low class clientele. It also serves as a referral centre for primary health centers within Ibadan and its environs. This hospital has 24 departments, 187 staff strength, 6 consultants, about 8 resident doctors, 37 nurses, 85 Administrative workers, 18 fieldsmen/cleaners and 31 wardmaids. The postnatal clinic of the hospital has two nurses, five Community Health Extension Workers (CHEWs) and six maids. Postnatal clinic manages about 35 patients with an average of 12 new cases per day.

3.3 Study Design

The study was a hospital based cross sectional descriptive survey

3.4 Study Population

The study population was postpartum women that brought infants between aged nine and twelve months for immunization.

Eligibility criteria

Mothers that brought their infants aged between nine and twelve months for immunization.

3.5 Sample Size Determination

The number of participants for the study was obtained using statistical formula for estimating single proportion.

According to Nigerian Urban Reproductive Health Initiative (NURHI) 2011 Contraceptive Prevalence Rate for Ibadan was 22% thus 22% was used as prevalence rate for this study

The size was calculated using the following formula

$$n = \frac{Z^2pq}{d^2}$$ (Cochran, 1977).

Where n = Minimum sample size expected

Z= standard normal deviate usually set at 1.96 corresponds to 95% confidence interval

p = expected prevalence rate, assumed to be 22%

d = precision for the study which is 0.05

q =1- p

$$n = \frac{Z^2 p(1-q)}{d^2}$$

$$n = \frac{(1.96)^2 \times 0.22 \times 0.78}{0.05 \times 0.05}$$

n =263.68

assuming a non-response of 10%

$$\frac{100 \times N}{100 - r}$$

Where

N = sample size

r = non-response rate (10%)

$$\frac{100 \times 264}{100 - 10}$$

n = 293.33

Sample size was increased by 10% so as to make up for non-response rate and increase the power of observation. It increases the sample size to 293. However the sample was increased to 444 so as to increase its representativeness, therefore a sample size of 444 participants was recruited into the study

3 6 Sampling Technique

A multistage sampling technique comprising three (3) stages was used in selecting the respondents for the study. The stages were as follows.

Stage 1

Three LGAs namely Ibadan North, Ibadan South West and Ibadan South East were selected using simple random sampling through balloting procedure from five LGAs in Ibadan metropolis.

Stage 2

One secondary health facility namely; Adeoyo maternity hospital, Oni and Son memorial hospital and Eleta catholic hospital was selected from each of the selected Local Government Areas

$$n = \frac{Z^2 p\,(1-q)}{d^2}$$

$$n = \frac{(1.96)^2 x 0.22 x 0.78}{0.05 X 0.05}$$

n =263.68

assuming a non-response of 10%

$$\frac{100 \times N}{100 - r}$$

Where

N = sample size

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Stage 3

Eligible women who brought their infant aged nine to twelve months for immunization in the selected health facilities were consecutively recruited into the study

On the whole 444 postpartum women were interviewed in the study for the period of six months between May and November, 2011.

3.7 Operational definition

Postpartum period: in this context starts from first hour after delivery of a baby and placental when the body of a woman has largely returned to its non-pregnant state and last through the first year after birth.

Contraceptive methods: in this context refers to the devices being used by an individual or a couple to prevent pregnancies whenever sexual activity is being engaged.

Modern contraceptive methods: Include female sterilization, oral contraceptive pills, Intra uterine contraceptive device (IUCD), injectables, implants, male condom, female condom, diaphragm, foam/jelly.lactational amenorrhea mehod (LAM) and emergency contraceptive.

Contraceptive prevalence: in this conte:xt, it is measured as the proportion of postpartum women who are using a contraceptive mehod at a given point in time.

3.8.1 Data collection method

The study employed quantitative method of data collection using a questionnaire to elicit information from the participants.

3.8.2 Research instruments

A questionnaire was developed and used for data collection. The questionnaire was a structured interviewer administered. The questionnaire was designed based on the research objectives, review of literature and guidance of the expert in the are field.

The questionnaire consisted of five (5) sessions namely:-

Section A: Socio-demographic characteristics of the participants such as age. level of education, religion, occupation, average family income, duration of marriage and marital status, place of delivery, number of living children were asked.

Section B: Participant's awareness of modern contraceptive methods. Have you heard about family planning before?, where are your sources of information?.

Section C: Participant's knowledge of modern contraceptive methods. The type of modern method(s) of contraception they are expected to identify included: female sterilization, pill, Intra Uterine Contraceptive Device, injectables, implants, male condom, female condom, Lactational Amenorrhea Methods, diaphragms, Emergency Contraception.

Section D: Practice of Postpartum contraception includes what are the respondents currently doing or any method being used to delay or avoid pregnancy?, the type of modern method (s) of contraception they are currently using and any problem experienced while using the contraceptives, reason(s) for using it before they got pregnant.

Section E: Intention to use MCM by the respondent who were not using contraceptives at the time of data collection, this includes intention to use MCMs, the types of MCMs the respondents intend to use, reason(s) for intending to use MCMs.

3.9 Data collection process

The study was carried out from May to November 2011. Data were collected by the investigator. It was an interviewer administered process.

3.10 Pre-test of the research instruments

The instrument (questionnaire) was pretested among sixty mothers' who brought their nine months infants for immunization to the Institute of Child Health, University College Hospital. After the pre-test, appropriate modifications were made to the instrument to ensure reliability of the research instrument.

3.11 Validation and reliability of the instruments

Validity: Several steps were taken to ensure the validity of the instrument. First, the validity of the content was achieved through review of literature and previous research works to develop appropriate questions. Secondly, the questionnaire was reviewed several times by the supervisor, and lastly the questionnaire was pretested.

Reliability: The outcome of the pretest was used to modify questions not appropriately put across to the respondents.

3.12 Data Management and Statistical Analysis

The questionnaire was numbered for recall purposes. It was checked for completeness and accuracy daily. It was also sorted, edited and coded manually by the investigator with use of a coding guide. The data were entered into the computer and the analysis was carried out using Statistical Package For Social Sciences (SPSS) version 16. Frequency counts were run to detect missing cases.

Independent variables were women's age, marital status, religion, education, work status, women occupation, spouse's education, spouse's work status, the number of living children etc.

Dependent (outcome) variables were use of MCMs and Intention to use MCMs.

Respondents' other characteristics which included: resumption of menstruation, knowledge of MCMs.

Some of the variables were re-coded to answer some of the objectives. Descriptive statistics such as mean and standard deviation were used to summarize quantitative variables. It was used also to generate and present frequency tables and charts.

Inferential statistics was done using chi-square test to determine associations between current modern contraceptive use and independent variables. Independent variables from the bivariate analysis were analysed using the logistic regression model at 10% level of significance. Predictors of current modern contraceptive use among postpartum were determined at a level of statistical significance of 5%. Logistic regression test was run in the analysis to determine factors influencing the use of MCMs.

3.13 Definition of Study Variables

3.13.1 Respondent's knowledge of modern contraceptive methods

Respondent knowledge was assessed with question 28, 29 & 30. Questions on the knowledge of MCMs were scored; respondents who gave wrong answers were scored 0 and right answers were scored 1. The maximum obtainable score was 10 with a mean knowledge score of 5.09 ± 2.41. Respondents who scored 4 and below were classified as having poor knowledge while those with scores of 5 and above were classified as having good knowledge.

3.13.2 Current prevalence of uptake of modern contraceptive methods

This is proportion of postpartum women reporting of current use of MCMs.

Overall prevalence of currently used of MCMs was determined by computing question 43 & 46. Currently use of MCMs was categorised into yes or no.

3.14 Ethical Considerations

The study followed the ethical principles guiding the use of human participants in research. Ethical approval was obtained from the department of Planning, Research and Statistics unit, Ministry of Health, Oyo state. Permission was obtained from Medical Directors and Chief Nursing Officers of the selected secondary health care facilities before the administration of the instruments

Informed Consent: The purpose, content and implication of the research were explained to the participants. Written, verbal informed consent was obtained from the participants before administering the questionnaires. Thumb prints were required for those that gave verbal consent. Participants were also informed that participation is voluntary and were free to decline participation or withdraw from the study at any time without reprisal or loss of benefit.

Confidentiality: Participants were assured of the confidentiality of the information given before and after the data collection and personal identifying information was not included in the data collection instrument to guarantee anonymity. Data collected was used only for research purposes and was kept confidential on a password protected computer. Names were not included in the data collection instrument.

Beneficence: Participants benefitted from being educated and enlightened about personal hygiene and child spacing.

Non-maleficence: The study did no harm to the participants as it did not involve any invasive or intrusive actions.

CHAPTER FOUR

RESULTS

4.1. Demographic Characteristics of Respondents

The demographic characteristics of the respondents.

The mean age of respondents was 29.5 ± 5.1 with the majority (83.8%) being less than 35years. Almost all the respondents (98.2%) were married. More than half (51.1%) of the respondents were Muslims. Majority (93.0%) were Yoruba's. Eighty eight point eight percent had at least secondary education. Almost half (48.6%) were self-employed while (7.0%) were unemployed. Half of women spouses (50.2%) had at least tertiary education and 48.6% of respondent's spouses were self-employed. Majority (85.6%) delivered their babies in the hospital and 73.7% had given birth to at least two children.

Table 4.1: Demographic characteristic of postpartum women (N=444)

Demographic characteristics	Frequency N=444	Percentage %
Age group (in year)		
<25	64	14.4
25-29	170	38.3
30-34	138	31.1
≥35	72	16.2
Mean ± SD 29.4±5.1		
Marital status		
Unmarried	8	1.8
Married	436	98.2
Duration of marriage(in year)		
1-3	197	44.3
4-6	116	26.1
7-9	44	9.90
10 above	78	17.6
NA	9	2.02
Religion		
Christianity	217	48.9
Islam	227	51.1
Women's employment		
Formal sector job	103	23.2
Self employed	216	48.6
Apprentice	94	21.2
Unemployed	31	7.0
Women's education		
Primary	50	11.2
Secondary	194	43.7
Tertiary	186	41.9
Post tertiary	14	3.2
Spouse's level of education		
Primary	11	2.5
Secondary	211	47.5
Tertiary	188	42.3
Post tertiary	34	7.7
Spouse's employment		
Formal sector jobs	165	37.5
Self employed	187	42.5
Apprentice	67	15.2
Unemployedt	21	4.8
No of living Children		
one	190	42.7
Two	137	30.8
Three	65	14.6
≥Four	52	11.8
Family income range		
≤ 10,999	65	14.6
11,000-20,999	36	8.1
21,000-30,999	78	17.6
31,000-40,999	42	9.5
41,000-50,999	25	5.6
≥51,000	78	17.6
Missing cases	120	27.0

4.2: Awareness of modern contraceptive methods

Tables 4.2: respondents' awareness of modem contraceptive methods. Majority (88.7%) had heard about modem contraception.

The common sources of information (61%) were from the health personnel. Sixteen percent of the respondents claimed they heard about modern contraceptive on radio. Fourteen point two percent (10%) claimed to have heard information on MCMs on television while (13%) claimed that family member were their source of information.

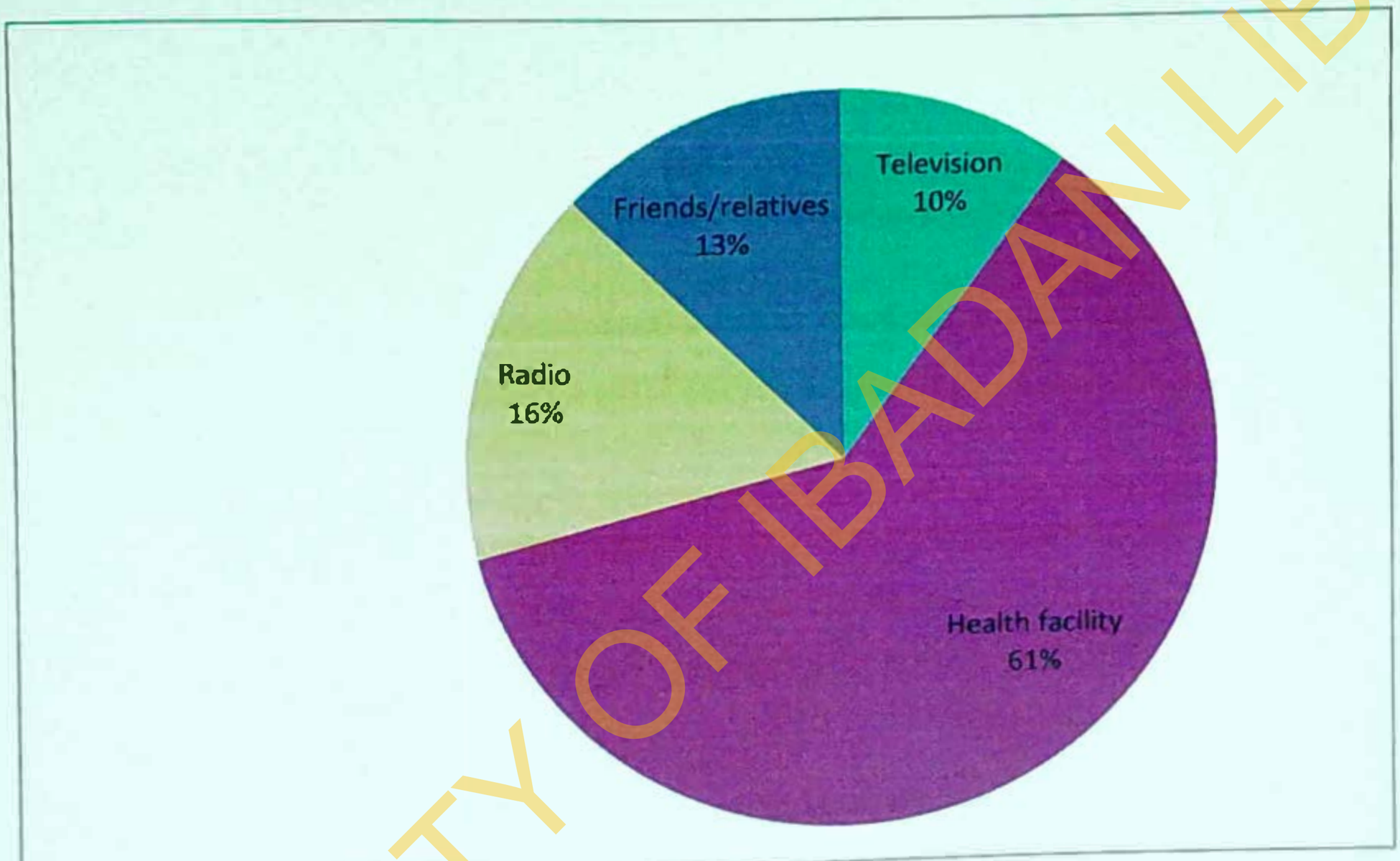

Figure 4.1 Source of information on MCMs

4.3 Respondent Knowledge of MCMs

More than half of respondents (54%) knew at least one modern contraceptive method

Do you know any modern contraceptive methods	Frequency	Percentage
Yes	240	54
No	204	46
Total	444	100

4.4 Knowledge of Types of Modern Contraceptive Methods

The male condom 320 (50.7%), oral contraceptive pill 150 (23.7%) and Injectables 67 (10.6%) were the most known MCMs

Table 4.4: Respondents' reported knowledge of various modern contraceptive Methods

Types of modern Contraceptives methods	Frequency N=444	Percentage (%)
Male condom	320	50.7
Oral contraceptive pill	150	23.7
Injectables	67	10.6
IUCD	55	8.7
Emergency contraception	23	3.6
Implants	9	1.4
Female Sterilization	5	0.8
Female condom	2	0.3
Diaphragm	1	0.2

Classification of Level of Knowledge on MCMs

Majority (57.7%) of the postpartum women had good knowledge of MCMs. The mean knowledge score was 5.1 ± 2.4 with majority (57.6%) of the respondents scoring above 4 marks.

Respondents that scores above 4 marks were classified as having good knowledge of modern contraceptive methods otherwise classified as poor.

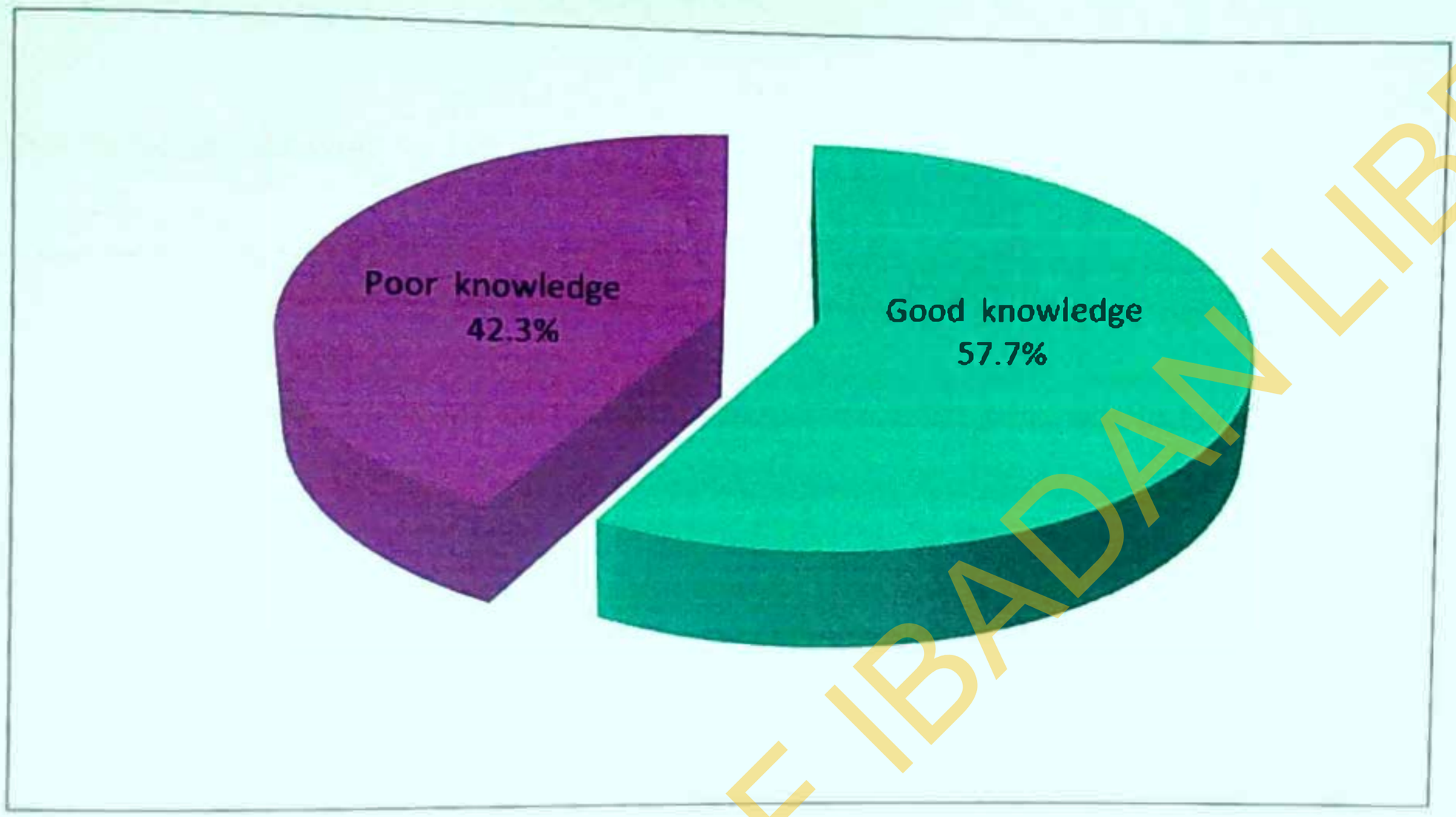

Figure 4.2 Level of knowledge on MCMs

More than half (61.7%) were currently using Modern Contraceptive Methods, (10.8%) were using traditional methods while (27.5%) were currently not using any methods.

Table 4.5: Pattern of Contraceptive Use within 12 Months of Postpartum

Current contraception methods	Frequency (N=444)	Percentage (%)
Currently using modern contraceptive methods	273	61.7
Using traditional method	48	10.8
Not using any method	123	27.5

The most reported MCMs currently being used among 273 respondents that were using MCMs at the period of survey: male condom (52.3%), Intra Uterine Contraceptive Device (11.7%) and oral contraceptive pill (11.0%)

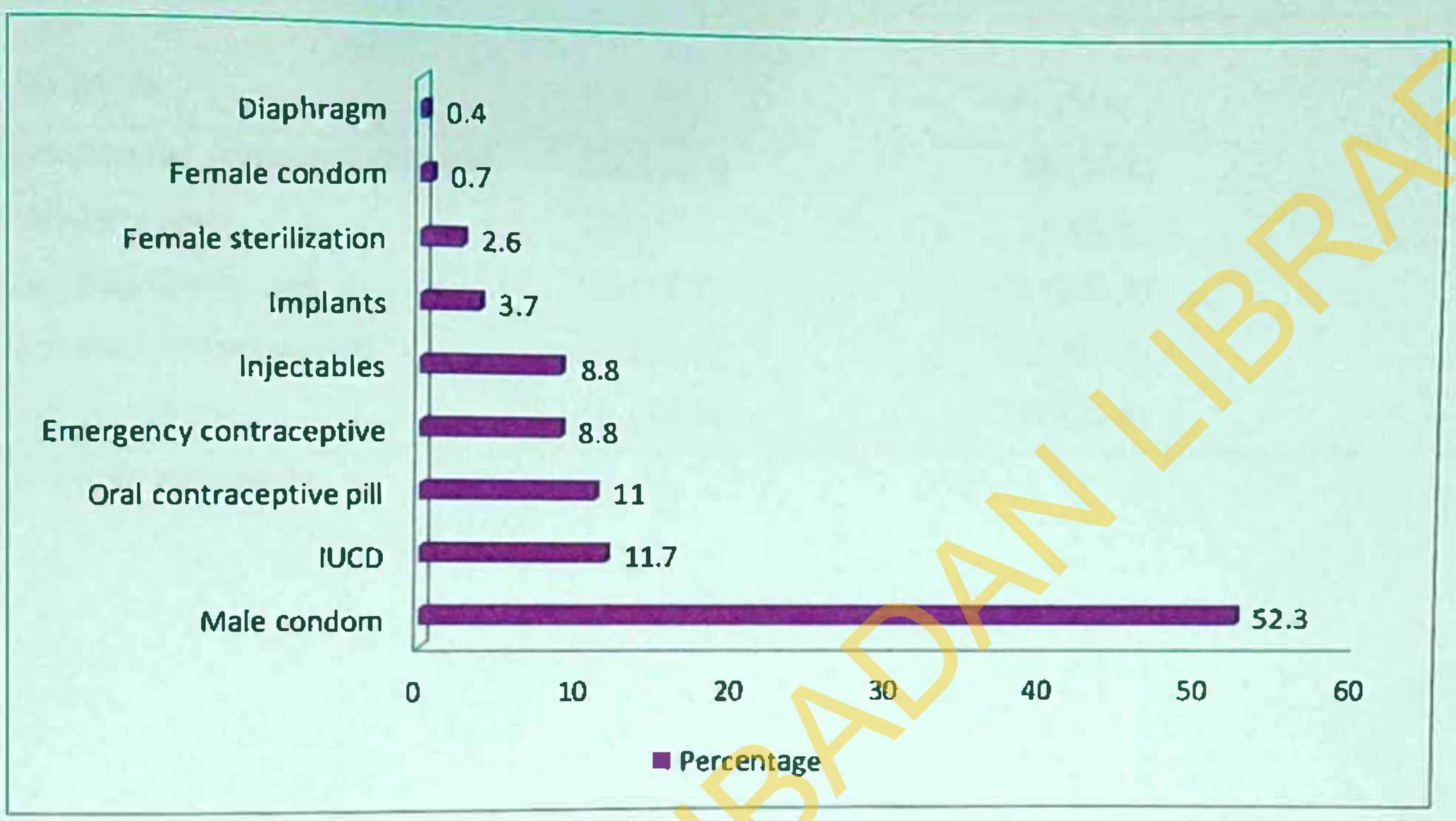

Figure 4.3: Proportion of MCMs currently being used by women within 12 months post delivery

Child spacing (91.1%) and limiting family size were the mostly reported reasons for using modern contraceptive methods during postpartum period

Table 4.6: Respondents' reasons for Using Postpartum Modern Contraceptive Methods

Variables	Yes (%)	No (%)
Reasons for contraceptive use	**316 (71.2)**	**128 (28.8)**
Child spacing	288 (91.1)	28 (8.9)
Limiting family size	59 (18.7)	257 (51.3)
Doctors / Nurses advice	59 (18.7)	257 (81.3)
Friends advice	15 (14.2)	272 (85.8)

Multiple responses

There was a marked difference in the practice of modern contraceptive method between respondent with poor and good knowledge on MCMs. Seventy five point eight percent of those with good knowledge were practicing modern contraceptive methods compared with 57.4% of those with good knowledge not practicing MCMs.

Table 4.7:Use of MCMs between respondents' with poor knowledge and those with good knowledge

Knowledge of MCMs	Currently using MCMs	Not currently using MCMs	TOTAL
Good	194(70.8)	62(36.5)	256(100)
Poor	80(29.2)	108(63.5)	188(100)
Total	274(100)	170(100)	444

The common reasons for not using MCMs within 12 months of delivery were fear of side effect (33.8%), desire for more children (27.6%), and husband disapproves (22.9%).

Table 4.8: Reasons for Not Using Modern Contraceptive Methods within 12 Months of Delivery

Reasons for not using MCMs	Frequency (N=171)	Percentage (%)
Fear of side effect	58	33.8
Desire for more children	47	27.6
Husband disapproves	39	22.9
Previous negative experience with MCMs	11	6.2
Faith / Religion	9	5.2
Friends / colleague disapproves	7	4.3

Out of 171 P W who were not using any of MCMs, less than 59 (38.3%) made their intention known on the use of MCMs.

Table 4.9: Intention to Use MCMs within 12 Months of Delivery

Did you intend to use MCM within 12 months of delivery	Frequency	Percentage
Yes	59	38.3
No	95	61.7
Total	**154**	**100**

Majority 61.7% do not intend to use MCMs at postpartum period and over half 61.0% did not indicate their contraceptive choices. The most preferred MCMs were injectables (16.9%) and Intra Uterine Contraceptive Device (10.2%).

Table 4.10: The Most Preferred Intended Postpartum Contraceptive Choice

Preferred intended postpartum contraceptive choice	Frequency(N=59)	Percentage (%)
Injectables	10	16.9
IUCD	6	10.2
Male condom	4	6.78
Oral contraceptive pill	3	5.10
No response	36	61.0

A higher proportion of the respondents 100(71.4%) aged 32 and above, those that had duration of marriage was ≥5years 121(69.5) and those that had at least two children 165(50.8) had good knowledge of modern contraceptive use with P <0.05.

Table 4.11: Knowledge of MCMs by socio- demographic characteristic of respondents

Demographic characteristics	Good knowledge N (%)	Poor knowledge N (%)	Total	X^2	p-value
age of respondent					
<25	27 (10.5)	37 (19.5)	64 (14.4)	18.58	0.00*
25-29	91 (35.5)	79 (42.0)	170 (38.3)		
30-34	83 (32.4)	55 (29.3)	138 (31.1)		
≥35	55 (21.5)	17 (9.00)	72 (16.2)		
Duration of marriage (in yrs)					
≤4	34 (50.2)	133 (49.8)	167 (100)		
≥5	121 (69.5)	53 (30.5)	174 (100)	16.18	0.00*
Women's level of education					
No formal& primary	32 (64.0)	18 (36.0)	50 (100)	0.93	0.62
Secondary	114 (60.6)	74 (39.4)	218 (100)		
Tertiary &post tertiary	110 (57.0)	83 (43.0)	193 (100)		
Spouse's level of education					
Primary& Secondary	119 (59.8)	80 (40.2)	119 (100)	0.68	0.41
Tertiary& Post tertiary	137 (55.9)	108 (44.1)	245 (100)		
Number of living children					
≤2	165 (50.8)	160 (49.2)	325 (100)	13.47	0.00*
≥3	1 (76.5)	28 (23.5)	29 (100)		
Place of delivery					
Hospital	222 (58.2)	158 (41.8)	380 (100)	0.62	0.43
Mission & home	34 (53.1)	30 (46.9)	64 (100)		
Women's work status					
Formally employed	65 (63.1)	38 (36.9)	103 (100)	1.63	0.44
Self employed	121 (56.0)	95 (44.0)	216 (100)		
Apprentice & unemployed	70 (56.0)	55 (44.0)	125 (100)		
Spouse's work status					
Formally employed	96 (58.2)	69 (41.8)	165 (100)	0.33	0.85
Self employed	111 (59.4)	76 (40.6)	187 (100)		
Apprentice & unemployed	49 (55.7)	39 (44.3)	88 (100)		

*** Significant at P<0.05**

Table 4.12: Association between Demographic Variables and the Use of Modern Contraceptive Methods

A higher proportion 194(66.6%) of postpartum women who had resumed menstruation were more likely to be current MCM users compare to those who had not resumed menstration (P=0.004) as shown in the table below.

Demographic characteristics	Currently using MCMs N (%)	Not currently using MCMs N (%)	Total	X^2	P value
Age of the respondent (yrs)					
<25	41(64.1)	23(35.9)	64 (100)	0.51	0.92
25-29	106(62.4)	62(37.6)	170(100)		
30-34	82(59.4)	56(40.6)	138(100)		
>35	45(62.5)	27(37.5)	72 (100)		
Duration of marriage (yrs)					
1-3	134(65.0)	72(35.0)	206(100)	3.99	0.26
4-6	63(54.5)	53(45.7)	116(100)		
7-9	27(69.2)	14(34.1)	44 (100)		
≥10	49(62.8)	29(37.2)	78 (100)		
Religion					
Christianity	125(57.6)	92(42.4)	217(100)	3.03	0.08
Islam	149(65.6)	78(34.4)	227(100)		
Women's education					
Primary	29(58.0)	21(42.0)	50 (100)	0.33	0.85
Secondary	120(62.2)	73(37.8)	193 (100)		
Tertiary & post tertiary	25(62.2)	76(37.8)	101(100)		
Women's work status					
Formally employed	65(63.1)	38(36.9)	103(100)	0.21	0.89
Self employed	131(60.6)	85(39.4)	216(100)		
Apprentice & unemployed	78 (62.4)	47(37.8)	125(100)		
Spouse's level of education					
Primary & secondary	119(59.8)	80(40.2)	199(100)	0.56	0.46
Tertiary & post tertiary	155(63.3)	90(36.7)	245(100)		
Spouse's work status					
Formally employed	104(63.0)	61(37.0)	165 (100)	0.17	0.92
Self employed	114(61.4)	73(39.0)	187(100)		
Apprentice & unemployed	54(61.4)	34(38.6)	88 (100)		
Birth order					
First	121(64.2)	68(35.8)	189(100)	1.94	0.38
Second	78 (56.9)	59(43.1)	137(100)		
>Third	74 (63.2)	43(36.8)	117(100)		
Resumption of menstruation					
Yes	194(66.6)	99(33.4)	293(100)	8.36	0.00*
No	77(52.4)	70(47.6)	147(100)		
Place of delivery					
Hospital	234(61.6)	146(38.4)	380(100)	2.63	0.27
Mission	25(71.4)	10(26.6)	35 (100)		
Home	15(51.7)	14(48.3)	29 (100)		
Knowledge					
Good	194(70.8)	62(36.5)	256(100)	50.65	0.00*
Poor	80(29.2)	108(63.5)	188(100)		

*significant at p value <0.05

Table 4.13: Association between Demographic Variable and Intention to Use MCMs

The bivariate association between these variables and intention to use and not to use MCMs (Classified as intention to use and intention not to use). Duration of marriage (P=0.03), women's education (P=0.04) and number of living children (P=0.01) were significantly associated with the intention to use MCMs within 12 months postpartum

Table 4.13: Association between reason for not use and Intention to use MCMs

Variables	Intention to MCMs N (%)	No intention to use MCMs N (%)	Total	X^2	P value
Desire for more children					
Yes	10 (19.6)	41 (80.4)	51 (100)	6.86	**0.01***
No	36 (41.4)	51 (58.6)	87 (100)		
Faith/ religion disapproval					
Yes	2 (20.0)	8 (80.0)	10 (100)	0.86	0.35
No	84 (65.6)	44 (34.4)	128 (100)		
Previous negative experience					
Yes	5 (41.7)	7 (58.3)	12 (100)	0.41	0.52
No	1 (32.5)	85 (67.5)	86 (100)		
Husband disapproval to its use					
Yes	5 (11.4)	39 (88.6)	44 (100)	14.0	**0.00***
No	41 (43.6)	53 (56.4)	84 (100)		
Friend/colleague disapproval					
Yes	2 (22.2)	7(77.8)	9 (100)	0.54	0.47
No	44 (34.1)	85(65.9)	129 (100)		
Fear of side effect					
Yes	12 (18.2)	54(81.8)	66 (100)	13.1	**0.00***
No	34 (47.2)	38(52.8)	72 (100)		

*** Significant at P<0.05**

The respondents with good knowledge of MCMs were four times more likely to use MCMs (OR 4.5, 95% CI=2.98-6.86) and those that had resumed menstruation were two times more likely to use MCMs (OR 2.1, 95% CI=1.37-3.27).

Table 4.14: Logistic Regression of Determinants of the Use of MCMs

Variables	Odd ratio (OR)%	95% CI	P value
Level of knowledge			
Good	4.501	2.97-6.82	**0.00***
Poor	1		
Resumption of menstruation			
Yes	2.166	1.37-3.27	**0.01***
No	1		

*** Significant at P<0.05**

Table 4.15: Logistic Regression Model of Determinants of Intention To Use MCMs By Respondents within 12 Months of Delivery

Postpartum women who desired to have more children were three times less likely to use MCMs than those that express no desire to have more children (OR 2.8, 95% CI 1.19-6.85). Postpartum women who indicated fear of side effects were three times less likely to use MCMs than those who do not indicate fear side effect (OR 2.8, 95% CI 1.25-6.58). Postpartum women whose husbands disapproved of the use of MCMs were five times less likely to use MCMs than those that their husbands approved of their usage (OR 5.1, 95% CI =2.97-6.82).

Women who had at least secondary education were twice more likely intended to use modern contraceptive methods within one year of delivery than those with primary education. (OR 2.1. 95% CI=1.048). Women who had at least three children were three times more likely intended to use modern contraceptive methods compared to those with one or two children (OR 3.3, 95% CI =1.1-4.3).

Table 4.15: logistic regression of predictor of the use of MCMs and intention to MCMs within 12 months post delivery

Variables	Odd ratio (OR)%	95% CI	P value
Desire for more children			
Yes	0.35	0.15-0.86	**0.02***
No	1		
Fear of side effect			
Yes	0.35	0.15-0.79	**0.01***
No	1		
Husband disapproval			
Yes	0.19	0.15-0.79	**0.00***
No	1		
Women education			
Primary & secondary	2.12	0.10-0.57	**0.03***
Tertiary & post tertiary	1		
Number of living children			
≤2	3.02	1.16-4.90	**0.02***
≥3	1		

*** Significance at P<0.05**

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Demographic Profile

The mean age of the respondent was 29.4 ± 5.1 years. This is consistent with the study conducted among women of reproductive age group in South western Nigeria (Olugbenga-Bello et al, 2011). The mean duration of marriage was 5.13 ± 4.4 years. This is similar to the result of the study carried out in Lagos University Teaching Hospital (LUTH) (Adegbola et al, 2011), where the mean duration of marriage was 5.0 ± 3.9 years. Majority of the respondents were married and living with their spouses, which is a primary indicator of regular exposure of mothers to the risk of pregnancy in the postpartum period

5.2 Awareness of Modern Contraceptive Methods

A large proportion of respondents (88.7%) in this study were aware of MCMs. This is similar to the finding of a study done in Pakistan by (Nighat Nisar et al, 2008) where 94% of the respondents were aware of modern contraceptive methods. It also corroborate with the study carried out in Plateau state of Nigeria where 93.4% of survey participants were aware of modern contraceptive methods (Envuladu et al, 2012). Similarly, in a study carried out by (Oyedokun, 2007) in the South western Nigeria, where he found 82.4% of the respondents had heard of contraceptives methods. The high awareness among the respondents may be due to the high educational level of the respondents in this study with majority (88.8%) have at least secondary education.

Majority of the respondents received information from health care providers in the health facilities on family planning methods especially the modern contraceptive methods and declared health facilities as their main source of information among women followed by advertisement on radio, friends/ relatives and from the television. This result is similar to the findings from a study conducted among women in the northern part of Nigeria where radio programmes and health workers were the most common sources of infomation about modern contraceptive methods (Solomon et al, 2010). It also corroborate with a study carried out by (Omo-Aghoja et al, 2009) who also found health worker and friends/ relatives as the common sources of information on awareness of modern contraceptive

methods. However, this is in contrast with the study carried out in Southwest Nigeria where less than half of the respondent reported that they had heard of contraceptive from the television, followed by few respondents reported that they heard of contraceptive from the radio while the remaining respondents reported being heard of contraceptives from the newspaper (Adeyemo et al, 2012). Friends and radio has been reported by (Oye-Adeniran et al, 2005) in a study to examine the sources of contraceptive commodity for users in Nigeria as the common sources of information on modern contraceptive.

5.3 Respondent's Knowledge of Modern Contraceptive Methods

More than half (57.7%) of the postpartum women had good knowledge of modern contraceptive methods. this corroborates with the study carried out by Moronkola and Ojediran (2006) in South west Nigeria. This study found out that the knowledge of MCMs stood at 53.6% among the respondents. The result is in contrast with (89.9%) knowledge of modern contraceptive methods among respondents in the study carried out by Augustine et al (2011). Almost all respondents could mention at least one modern contraceptive method. Majority of the respondents named at least four modern contraceptive methods. Majority of the respondents mentioned condom, few of the respondents mentioned pill, injectable, IUCD and the least of the methods being mentioned were emergency contraception and implant. However, there was a wide range of knowledge across methods. The most commonly mentioned of these methods were male condom, pill and injectable in this study. Male condom has been reported by Kayembe et al (2006) in a study to determine the prevalence and to identify the correlates of the use of modern contraceptive methods among sexually active females as the most commonly used MCM by most of the respondents. This is consistent with the findings from 2008 NDHS result where the most commonly known modern contraceptive methods was male condom. The result corroborate with the findings of Augustine et al (2011) in a study carried out in Uyo, Nigeria where male condom, pill and injectable were mostly mentioned by the respondents. Similarly, a study carried out in Uganda among people living with HIV in the region found male condom, oral contraceptive pills and injectables to be the most popular methods of contraceptives mentioned by the respondents (Nattabi et al, 2011).

Male condom and oral contraceptive pill being the most commonly mentioned in this study may be due to the fact that they are cheap, readily available and probably due to the

frequent advertisement on the media with regards to family planning and prevention of sexually transmitted disease (Olugbenga-Bello et al, 2011). Respondents had the poor knowledge of sterilization, female condom and diaphragms. This is similarly reported by Oye-Adeniran et al (2000) and Umoh et al (2011) in their studies carried out among women found out that the respondents had poor knowledge of sterilization method, female condom and diaphragms modern contraceptive. Probably these may be related to its low level of acceptance and practice of sterilization and also this sterilization may be due to cost, the need for surgery which many women in our environment are averse to and the fact that it is a permanent method amongst many other reasons. As a very effective mode of contraception it is important to raise awareness on it and also provide the enabling environment for practicing them. Improvement on contraceptive knowledge among postpartum women has the potential to positively impact rates of inconsistent contraceptive use during postpartum period.

5.4 Prevalence of the Use of Modern Contraceptive Methods

This study found out that the prevalence of modern contraceptive methods among postpartum women was 61.7%. The result is consistent with the prevalence of MCMs (61.7%) for the developing world in 2007 United Nation (2009). It corroborates with the findings of a study conducted among women in south western, Nigeria (Olu-gbenga Bello et al, 2006). Similarly, a study carried out by (Akman and Tuzun. 2010) found (68.7%) of the postpartum women using modern contraceptive methods. However, this contrast with what was found in a study carried out by Heavy et al (2008) where 54% were using modern methods of birth control such as oral contraceptive pill, intra uterine contraceptive device (IUCD), injectables, implants, barrier method and sterilization Heavy et al (2008).

It is also in contrast with a study conducted in Plateau state Nigeria (Envuladu et al, 2012). This is far higher than prevalence of MCMs recorded by 2008 Nigerian Demographic Health Survey, in Southwest and among women in Ibadan (NDHS, 2008). The high prevalence modern contraceptive methods may be due to high literacy rate among the respondents with about two-thirds having post-primary school education implying that education provides better understanding of health information. It may also be as a result of these women having been able to receive information about various types of modern methods from health facilities and they are capable of making a more informed decision about which method is best suited to their needs and situations.

The most common method that respondents had ever used were the male condom, followed by IUCD. It was similarly reported by Nwachukwu & Obasi (2008) that the male condom was the most popular method used by women of reproductive age. This is probably due to the fact that it is readily available, affordable and it is much more advertised. A study in Uganda also found male condom, oral contraceptive pill and Injectables to be the most popular methods used by women (Nattabi et al, 2011). It was also found that 11% of respondents used oral contraceptive pill, which is lower than 60% of oral contraceptive pill used by respondents in the study carried out by (Lwetamira et al, 2012). Most of the women who currently used modern contraceptive methods mentioned child spacing as the major reason for using MCMs while few of the respondents used MCMs for limiting family size. This shows that the women used contraceptive to space birth more than to limit birth. It is essential to device programmes to spread awareness among women to use contraception to limit births. Eighteen point seven percent used modern contraceptive methods based on physician's advice and very few respondents used MCMS based on friend's advice. Building the capacity of health workers to provide counseling and advice should be addressed.

5.5 Determinants of Use of MCMs among Postpartum Women

In this study, socio-demographic factors such as age, duration of marriage, religion, ethnicity, level of education, work status were not significantly associated with modern contraceptive use. However, associations have been found between some socio demographic characteristics factors and use of modern contraceptive methods. In a study by Thang and Huong (2003), age was found to be one of the most influential determinants of contraceptive practices. Religion has also been recognized and documented by previous studies as a very important determinant of contraceptive usage. Gaur et al (2008), Nwachukwu and Obasi (2008), Shah et al (2006). while Olugbenga-Bello et al (2011) in a study carried out in south west Nigeria found association between religion and used of family planning methods with the Christians having a higher uptake of family planning methods than the Muslims in the study.

High levels of contraceptive use are associated with lower birth rates and fewer unintended births. Outcomes that are important determinants of modern contraceptive use include respondents' level of knowledge which was significantly associated with the use of modern contraceptive methods. Respondents with good knowledge had significant association with the use of MCMs. This is contrary to the study that assessed preferred

postpartum contraception methods and their practice among married women in Zanjan, Iran in that study where respondents' knowledge were not associated with postpartum family planning (Mousavinasab et al,2010)

Resumption of menstruation had significant association with the use of modern contraceptive methods among women in post delivery stage. The result corroborate with the findings of Ndugwa and Cleland (2011) where menstrual resumption acts as a trigger for initiating contraceptive use with a peak of contraceptive initiation occurring shortly after the first month of resumption of menstruation

The dynamics of contraceptive use among women in postpartum period should be of interest to the family planning programme, since delay of use of MCMs until the return of menstruation might subject women to the risk of unwanted pregnancy. Commencement of sexual intercourse within postpartum periods may also herald a greater risk of unintended pregnancy. Some women may be fecund few weeks after delivery especially those that are not breastfeeding. So, a sexually active woman after delivery not using an effective contraceptive method increases her vulnerability to pregnancy in the month before her first menstruation (Anzaku et al, 2014).

5.6 Factors Influencing Intention to Use Postpartum Modern Contraceptive Methods

Majority (61.7%) of the respondents expressed their intention to use any of these modern methods among those not using contraceptive. This is consistent with (70.5%) respondents that planned to use contraception in the future in a study carried out by (Umoh et al.2011). Similarly, (70%) respondents reported their intention to adopt a method within the postpartum period carried out by Eliason et al (2013) in a study to identify the factors that influences respondents' intention to adopt postpartum family planning. However, this result is contrary to the 42%, 46% and 49% found out in the study carried out by Ogbonna et al (1999), Adegbola et al (2011) and Newmanet al (2005) respectively.

Few of the respondents that did not state intention to use MCMs within the postpartum period gave reasons. Among reasons for not use was perceived side effect. in this study, perceived side effect was given as main reason for not using MCMs. This is consistent with the findings of Teye (2013) where respondents mentioned perceived side effect as their major reasons for not using modern contraceptive.Other reasons stated included

desire for more children and husbands/parners' disapproval, This is consistent with the findings of Teye (2013) .This observation have been noted by some researchers that husbands' approval strongly influence contraceptive use in Africa (Eze, 1993, Ainsworth, 1995). The result contrast the study carried out by Adegbola et al (2011). Husbands'/ partners' disapproval to use of MCMs has shown to influence intention to use postpartum contraceptive methods. It is also pertinent, to observe that a substantial number of respondents considered their husbands' approval as strong determinant of their contraceptive use. Reasons for this may be the high regard given to men (husband) in determining number and when to have children among the study population which is typical of many African nations. This gives credence to the fact that husbands or partners need active counseling in order to improve contraceptive acceptance and usage.

Postpartum women who were not currently using contraception but intend to use MCMs before the end of 12 months post delivery, preferred to use Injectables, followed by IUCD and male condom. This is consistent with 2008 NDHS where those who were not using contraception at the time of survey but intend to use it in future stated that they intended to use Injectables, followed by pill and condom (NDHS,2008).

Educational attainment of respondents is a major factor influencing their intention to use postpartum contraception. Having higher education was found to be significantly associated with intention to use modern contraceptive methods. This is consistent with the study carried out by Akinlo and Bisiriyu (2013) who found education to be significantly associated with postpartum contraceptive use. It corroborates with the studies of Odimwengu (1999), Orji and Onwudiegwu (2002) where the level of education was found to play an important role in the adoption of modern contraceptive methods. These findings corroborate with the studies done by Rojnik (1995); Tehrani, et al (2001), Atuyambe, et al, (2008) where proportion of women using the modern contraceptive methods tending to increase with level of education and the association was statistically significant. On the contrary, a study done by Newmann et al, (2005) observed that the level of education predicted contraceptive knowledge but not its use.

Education is a powerful tool for information and empowerment. With good education, couple are aware of the health and economic danger posed by unplanned pregnancies and the benefits of the use of contraceptives to plan and limit child bearing (Adegbola et al, 2011).

Having at least two children was found to be significantly associated with the intention to use modern contraceptive methods within one year of delivery. This association has been noted in other studies Ogbonna et al (2006), Techrani et al (2001), Fikree et al (2001). This is consistent with the study carried out in Pakistan by (Shah and Palmore, 1979) which revealed that women who had more children than their ideal number of children and who did not want any more children were four times more likely to have used contraceptives compared with women who had fewer children than their ideal number and who wanted more children. Women who report not wanting to have children, ever or in the near future, are more likely to use family planning and less likely to have children than women who want children soon (Bongaarts, 1992). This also corroborate with the 2008 Nigeria Demographic Health Survey report that women do not begin to use contraception until they have had at least one child (NPI, 2009). Number of living children a woman has can have an influence on modern contraceptive use because there is a tendency that the desire for additional children may decrease as number of living children increases.

5.7 Limitations of the Study

The study design being cross-sectional, would limit the extent to which inferences can be drawn with respect to the causal relationships among variables. Secondly, this study recruited postpartum women who were attending immunization clinics in government facilities such that findings may therefore not be generalizable to all women in the country. Lastly, the measures used were all self-reported, so a degree of bias in reporting is possible.

5.8 Conclusion

This study contributed to the knowledge of prevalence and determinants of modern contraceptive use among postpartum women. More than half of the respondents had good knowledge of MCMs, which is still low compared to other studies carried out in South West, Nigeria (Olugbenga et al, 2011, Moronkola et al, 2006). Therefore, the knowledge of the women should be upgraded through counseling by health care provider during antenatal visit and using peer educator to pass across adequate information on modern contraceptive methods.

The overall prevalence of modern contraceptive method within the postpartum period in this study was high. More than half of the respondent had no intention of using modern contraceptive methods within twelve months post delivery.The important factors influencing the intention to use MCMs are having at least secondary education and having at least three children.

Many factors were identified to be responsible for non-usage of MCMs among postpartum women includes husbands/ partners disapproval, desire to have more children, perceived fear of side effect, previous negative experience with contraceptive use, faith/religion and friends'/colleagues' disapproval of its use. Fear of using modern contraceptives might harm mother's or infant's health. These findings suggest that even when populations have access to services, it is important for health care providers to offer advice about available modern methods, to offset fear about negative side effects and enable fully informed choice.

Respondent's knowledge of MCMs significantly influenced the practice of postpartum modern contraceptive. Resumption of menstruation was found to be significantly associated with the use of MCMs. Women are at the risk of becoming pregnant in the first month before the commencement of her menstruation, unfortunately many women do not initiate use of MCMs until after menstruation has resumed.

5.9 Recommendations

1. Only very few respondents heard information on contraception through the media (television, radio and flayer) there is need to improve the level of knowledge of postpartum women about benefits and use of MCMs therefore family planning

messages should be disseminated by creating serious awareness through the mass media.

2. Public enlightenment program should be targeted at addressing postpartum women that they are susceptible to unintended pregnancies when they are sexually active even when they have not resumed their menstruation.

3. Husbands/partners disapproval was one of the predictor of not using modern contraceptive methods. Hence, there is need for male involvement so that it will help women to take decision on its usage

4. There is need for family planning programs and policies to focus on intention to use modern contraceptive methods during postpartum period as a measure of contraceptive demand.

5. Family planning programs can be used to develop public messages to educate couples about pregnancy risk prior to return of menstruation and encourage the use of MCMs because women who have recently given birth need more attention of family planning and reproductive health programs if they are to reduce their number of unwanted births, abortions and to lengthen subsequent birth intervals.

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APPENDIX 1

Table 1: Recoded Schema for socio demographic variables

Variables	Recoded variable
Respondent's age (years)	0-24
	25-34
	35-44
Marital status	Not currently married (single, cohabiting, separated,divorced)
	Currently married
Marital duration (years)	≤4
	4-6
	7-9
	≥10
Respondent's religion	Christianity
	Islam
Respondent's/partner's level of education	Primary and below
	Secondary
	Tertiary &post tertiary
Respondent's/partner work status	Formal sector job
	Self employed
	Apprentice &unemployed
Number of living children	≤2
	≥3
Place of delivery	Hospital
	Mission
	Home

APPENDIX 11

INFORM CONSENT FORM

PREVALENCE AND DETERMINANTS OF MODERN CONTRACEPTIVE USE AMONG POSTPARTUM WOMEN IN SELECTED SECONDARY HEALTH FACILITIES IN IBADAN METROPOLIS, OYO STATE NIGERIA

Dear respondent,

My name is BOBADOYE IYADUNNI WURA, I am carrying out a research on prevalence and determinants of modern contraceptive use among postpartum women in selected secondary health facilities in Ibadan metropolis, Oyo state, Nigeria. This is in partial fulfillment of the requirement of Masters Degree in Public Health (Epidemiology and Medical statistics) University of Ibadan.

I expect to recruit a total number of 442 participants in these selected secondary health facilities into my study. You will be interview by research assistant using a questionnaire. The interview is likely to take about 20 minutes. Your participation in this study will not cost you anything. There is no direct benefit in participating in this study but findings from this study would be useful to programs designed to address such issues

All information collected from this study will be given code numbers and no name will be recorded and as such the information collected cannot be linked to you or your family in any way. As part of my responsibility to conduct this research properly, officials of Ministry of Health ethics review committee may have access to these records

Statement of researcher:

I have fully explained this research to the prospective participant and have given sufficient information to make informed decision

Date ..... Signature.....

Name.....

Statement of person giving consent

I have read the description of the research. I understand that my participation is voluntary. I have better understanding about the purpose of research study to judge that I want to take part in it. I understand that I may freely withdraw from participating in the study at any time.

Date..... Signature.....

APPENDIX III

DATA COLLECTION

QUESTIONNAIRE ON THE PREVALENCE AND DETERMINANTS OF MODERN CONTRACEPTIVE USE AMONG POSTPARTUM WOMEN IN SELECTED SECONDARY HEALTH FACILITIES IN OYO STATE, NIGERIA

Serial number.....

Date of interview.....

Health facility.....

Dear respondent,

My name is BOBADOYE IYADUNNI WURA, I am a student of Department of Epidemiology and Medical statistics, faculty of Public Health, University of Ibadan. I am carrying out a research on **"Prevalence and determinants of Modern Contraceptive Use among Postpartum women'.** The information obtained will not be used against you and will be kept confidential. Participation in this research is voluntary and you are free to refuse to take part in the study. You also have a right to withdraw at anytime. If, you choose to do so. I will greatly appreciate your help in providing appropriate response to the questions and taking part in the study. The information you provide will be treated with strict confidentiality. Thanks for your co-operation

SECTION A; SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Age in years (Last Birthday).....

2. Marital Status 1 Single ☐ 2. Married ☐ 3 Divorced ☐
   4 Widowed ☐ 5 Cohabiting ☐

3. How long have you been married (years).....

4. Religion 1. Christianity ☐ 2 Islam ☐ 3. Traditional ☐
   4. Others, specify .....

5. Ethnicity 1. Yoruba ☐ 2. Hausa ☐ 3. Igbo ☐
   4. Others specify.....

6. What is the highest level of education you completed in school?

1. No formal education ☐ 2. Quranic education ☐ 3. Primary ☐ 4. Secondary ☐
5. Tertiary ☐ 6. Post tertiary ☐

7. What is your occupation? (Please specify) .....

8. Average family monthly income ₦.....

9. What is your Spouse/Partner level of education? 1. No formal education ☐
2. Quranic education ☐ 3. Primary ☐ 4. Secondary ☐
5 Tertiary ☐ 6. Post tertiary ☐

10. What is your spouse/partner occupation?.....

11.Placeofdelivery.....

12. What is the age of your child (in months).....

13. What is the birth order 1. First ☐ 2. Second ☐ 3. Third ☐ 4. Fourth ☐
5. Fifth ☐ 6.Sixth ☐ Others specify.....

SECTION B: PREGNANCY HISTORY

14. How many times have you ever been pregnant in life?.....

15. How many times have you given birth before? .....

16. How many children do you have now? (Please specify).....

17. Have you ever given birth to twins or multiple pregnancies before? 1. Yes ☐ 2.No. ☐

18. If yes, how many times?.....

19. Have you ever had a miscarriage, abortion or still birth before? 1. Yes ☐ 2. No ☐

20.If yes, how many times? .....

21.When did your last delivery take place?.....

22.How old is your last born(please specify).....

23. How long ago was your last delivery (in months?).....

24. How long was your last pregnancy? 1 Nine months ☐ 2. Eight months ☐
3. Seven months ☐ 4. Other (please specify).....

SECTION C; WOMEN'S AWARENESS ON MODERN CONTRACEPTIVE METHOD

25. Have you heard about family planning before?

1. Yes ☐ 2. No ☐

26. Where is your one main source of information?

1. Media ☐ 2.Hospital ☐ 3.Family member ☐ 4.Radio ☐

Others specify.....

SECTION D: WOMEN'S KNOWLEDGE ON MODERN CONTRACEPTIVE METHOD

28 How many methods do you know?.

29. Do you know any of the Modern Contraceptive Methods?

30.What types of modern method of contraception were you using before pregnancy?

TYPE	DESCRIPTION	YES	NO
FEMALE STERILIZATION	Women can have an operation to avoid having children		
PILL	Women can take a pill every day to avoid becoming pregnant		
IUD	Women can have a loop or coil placed inside them by a doctor or a nurse		
INJECTABLES	Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.		
IMPLANTS	Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.		
MALE CONDOM	Men can put a rubber sheath on their penis before sexual intercourse.		
FEMALE CONDOM	Women can put a rubber sheath in their vagina before sexual intercourse.		
LACTATIONAL AMENORRHEA METHOD (LAM)	Up to 6 months after childbirth, a woman can use a method that requires that she breastfeeds frequently, day and night, and that her menstrual period has not returned.		
DIAPHRAGM	Women can place a thin flexible disk in their vagina before intercourse.		
EMERGENCY CONTRACEPTION	As an emergency measure after unprotected sexual intercourse, women can take special pills at any time within five days to prevent pregnancy.		
Others specify			

31. When do you think a woman should start using contraceptive after delivery (in months)?. One month ☐ 2. 41 days ☐ 3.Two months ☐ 4. Three months ☐

5. Four months ☐ 6.Five months ☐ 7. Six months ☐ 8. seven months ☐

Others please specify .....

32. What do you think is the reason for using family planning methods or contraceptives?

.....

33. Have you ever used family planning method to delay pregnancy before?

1 Yes ☐ 2 No ☐

34. If Yes, what was your age (in years) when you first used it?.....

35. Were you using any modern method of contraception before you got pregnant?

1. Yes ☐ 2.No ☐

36. If yes, Mention the type of modern contraceptive methods you have used?

.....

.....

37. What were your reasons for using it before you got pregnant? .....

38. Was there any problem or negative experience when you were using it?

1. Yes ☐ 2. No ☐

39. If Yes, What type of negative experience?

TYPE	YES	NO
Heavy menstrual loss		
Severe Uterine Cramps(In Previous Intra uterine contraceptive devices users)		
Irregular menstrual bleeding (In previous users of injectables and combined oral pills)		
Excessive weight gain (In previous users of injectables and combined oral pills)		
Severe acne (In previous users of injectables combined oral pills and plants)		
Others specify		

SECTION D: POSTPARTUM CONTRACEPTION PRACTICE

40. Have you started your menses since delivery 1 Yes ☐ 2. No ☐

41 If yes, when did you have your last menstrual period? .....

42. Are you currently doing something or using any method to delay or avoid getting pregnant? 1 Yes ☐ 2. No ☐

43.Are you currently using any modern method of contraception since delivery?

1. Yes ☐ 2 No ☐

If yes, answer questions **44-49** and if No, go to questions **50-56**

44. How soon after delivery (in months) did you start using modern contraceptive?.....

45. How long (in months) have you been using it?.....

46. What type of modern methods of contraception are you using after delivery?

TYPE	DESCRIPTION	YES	NO
FEMALE STERILIZATION	Women can have an operation to avoid having children		
PILL	Women can take a pill every day to avoid becoming pregnant		
IUD	Women can have a loop or coil placed inside them by a doctor or a nurse		
INJECTABLES	Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.		
IMPLANTS	Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.		
MALE CONDOM	Men can put a rubber sheath on their penis before sexual intercourse.		
FEMALE CONDOM	Women can put a rubber sheath in their vagina before sexual intercourse.		
LACTATIONAL AMENORRHEA METHOD (LAM)	Up to 6 months after childbirth, a woman can use a method that requires that she breastfeeds frequently, day and night, and that her menstrual period has not returned.		
DIAPHRAGM	Women can place a thin flexible disk in their vagina before intercourse.		
EMERGENCY CONTRACEPTION	As an emergency measure after unprotected sexual intercourse, women can take special pills at any time within five days to prevent pregnancy.		
Others specify			

47. What are your reason(s) for using postpartum contraceptives?

TYPE	YES	NO
To delay child bearing		
Prevention of further pregnancies		
Doctor or Nurses advice		

Husband s' advice to use		
Others specify		

48. Do you have any negative experience with the contraceptive use since delivery?

1. Yes ☐ 2.No ☐

49.If yes what type of negative experience?.....

50. What are your reasons for not using or not wanting to use postpartum contraceptives?

TYPE	YES	NO
Desire for more children		
Faith / Religion		
Previous negative experiences with contraceptive use		
Husband objects to it's use		
Friends and colleagues objection		
Fear of side effects		
Others specify		

SECTION E; INTENTION TO USE CONTRACEPTION WITHIN ONE YEAR OF DELIVERY.

51. Do you intend to use any contraception methods later within the first year of delivery?

1 Yes ☐ 2 No ☐

52. When do you intend to start using any of the modern contraceptive methods?.....

53. What method(s) of contraception do you intend to use?.....

54. What are your reasons for intending to use it? .....

55. How can contraceptive use after delivery be improved?.....

56 .In your opinion, how can unintended pregnancies be prevented?

.....

.....

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX IV

GIGBAYE LATI KOPA

WIWOPOSI ATI OKUNFA OHUN ETO FETOSOMOBIBI ODE ONI LAARIN AWON OBIRIN TI O SESE BI MO

Oludahun tooto,

Oruko mi ni ..... mo n se iwadi lori wiwoposi ati mimaalo ohun eto fetosomobibi ode oni laarin awon obirin ti won sese bimo ni awon ilewosan ti moyan ni agbeagbe ibadan ni ipinle Oyo ti orile ede naijiria

Eyi je okan lara amuye fun asekagba ni ipile eko keji ni eka ti won ti nko nipa mimo nkan nipa itan kale arun, bi ase n mo bi ise ilera se nlo si ati mimo imototo ayika (EMSEH) ti o wa ni ile ikose isegun ni ile eko giga ni ilu Ibadan.

Won reti pe kin n ri akopa 444 ni apapo ni awon ile iwosan ti mo yan ni agbegbe ibadan yi fun lilo eko yi. Oluwadi yoo fi oro wayin lenu wo lati inu iwe iwadi yi. Oro iwadi yi yoo si gba yin to ogun iseju. Kikopa ninu iwadi yi ko ni na yin ni nkankan. Ko si anfani kan gboogi ti e ma je nibi kikopa ninu iwadi yi sugbon awon abajade iwadi yi yo wulo fun awon eto ti won ba gbe kale lori oro to ni se pelu iwadi yi.

Gbogbo oro ti a ba gba ni a o fun ni nomba idanimo ati wipe a o ni gba oruko ati ibi ti e hun gbe sile nitorina a o le da oro enu yin mo lona kankan. Gege bi ara ojuse mi lati ri daju pe mo se iwadi to peye, awon igbimo to wa ni igbanu gbigbe oro iwadi wo ni ministri ilera ti ipinle Oyo

Kikopa yin ninu oro iwadi yi ko pon dandan. E si le yan lati dekun kikopa ninu iwadi yi niigbakugba to ba wu yin.

Oro Oluwadi

Mo ti se alaye oro iwadi yi ni kikun fun tooto mo si ti so oro to lati je ki won se ipinnu Lati kopa

Deeti..... Ifowosi.....

Oruko.....

Oro eni to nfun ni layeMo ti ka apeju oro iwadi yi. Mo si loye wipe kikopa mi ki se dandan ti mo ba fe ni. Mo ti mo to lori eredi iwadi yi lati se dajo boya mo ma kopa ninu re. Mo loye pe, mo ni eto lati dekun kikopa ninu oro iwadi yi nigbakugba

Deeti .....Ifowosi.....

APPENDIX V

ISE IWADI

WIWOPOSI ATI OKUNFA FUN FETOSOMOBIBI ODE ONI LARIN AWON OBINRIN TI WON SESE BIMO NI AWON ILE IWOSAN IJOBA TI MOYAN FUN ISE IWADI YI NI AGBEGBE IBADAN, NI IPINLE OYO

Nomba idanimo.....

Deeti iwadi.....

Ile iwosan.....

Oludahun tooto,

Oruko mi ni BOBADOYE IYADUNNI WURA, mo je omo ile iwe eko giga keji ni eka ti won ti nko nipa itan kale arun ati bi ase mo bi ise ilera se nlo (EMS) ti o wa ni ile ikose isegun ni ile eko giga ti Ibadan ni ilu Ibadan. Kikopa ninu iwadi yi ko ni na yin ni nkanka.Gbogbo oro ti a ba gba ni a o fun ni nomba idanimo ati wipe a o ni gba oruko ati ibi ti e hun gbe sile nitorina a o le da oro enu yin mo lona kankan. Gege bi ara ojuse mi lati ri daju pe mo se iwadi to peye, awon igbimo to wa ni igbanu gbigbe oro iwadi wo ni ministri ilera ti ipinle Oyo.

Kikopa yin ninu oro iwadi yi ko pon dandan. E si le yan lati dekun kikopa ninu iwadi yi niigbakugba to ba wu yinE jowo, e ma fi oruko yin si. Awon idahun yin si iwe iwadi yi ni ao pamo daradara, e jowo e fun wa ni idahun tooto ati eyi ti o fi erogba yin han.

IPELE A:

OLUDAHUN

1. Ojo Ori ni Odun (ojo ibi ti o se gbeyin).....
2. Se o ti loko tabi laya? 1 nko ti loko ☐ 2. Mo ti loko ☐ 3.Moti pinya ☐
   4 oko mi ti ku ☐ 5. Mo gbe pelu ore kunrin mi ☐
3. Oto odun melo ti oko?.....
4. Iru esin wo ni o nse ? 1. Igbagbo ☐ 2.Musulumi ☐ 3.Abalaye ☐
   4. Iru esin miran jowo ko sile .....
5. Iru eya wo ni o 1.Yoruba ☐ 2. Hausa ☐ 3. Igbo ☐
   4. Iru eya miran jowo ko sile.....
6. Bawo ni o se kawe to? 1. Mo kawe rara ☐ 2.Mo lo ile kewu ☐ 3. Mo pari ile iwe alakobere ☐ 4. Mo pari ile eko oni pele keji ☐ 4.Mo pari ile eko giga ☐ 5. Mo ti keko gboye ☐

7. Iru ise wo ni o nse? (jowo salaye) .....

8. Bawo ni ebi re se n ri owo si ni ososu?.....

9. Bawo ni oko re tabi ore re se kawe to?1. ko kawe rara ☐ 2.O kewu ☐

3. Ile iwe alakobere ☐ 4.Ile eko oni pele keji ☐ 4.Ile eko giga ☐ 6. Akeko gboye ☐

10. Iru ise wo ni oko re tabi ore re nse. ?.....

11. Nibo ni o bimo si .....

12. Kini ojo ori omo ti o sese bi (ni osu).....

13. Kini ipo re larin awo omo yoku ? 1.akobi ☐ 2.Ekeji ☐ 3. Eeketa ☐ 4.Eekerin ☐

5.Eekarun ☐ 6. Ekefa ☐ 7Abikeyin ☐

7 Ipo miran ko sile.....

IPELE B:

ITAN OYUN NINI

14.Igba melo ni o ti loyun ri ni igbe si aye re?.....

15. Igba melo ni o ti bimo seyin? .....

16.Omo melo ni oni bayi.....

17. Nje o ti bi ibeji tabi jubeelo ? 1. Beeni ☐ 2.Beeko ☐

18. Ti o ba jebee, Igba melo?.....

19. Nje oyun ti baje mo ri tabi o ti seyun tabi o ti bimo ku ri ? 1. Beeni ☐ 2. Beeko ☐

20. Ti o ba je beeni, Igba meelo ? .....

21. Igba wo ni o bimo gbeyin?.....

22. Omo odun meelo ni abigbeyin re ?.....

23. Bawo ni igba ti o bimo gbeyin se pe to (Ni osun).....

24. Igbawo ni oyun ti oni gbeyin gbe ni ara reki o to bii? 1 Osu mesan ☐ 2. Osu Mejo ☐

3. Osun meje ☐ 4.To ba se tun je jowo so.....

IPELE D:

GBIGBOSI OBIRIN NIPA FETOSOMOBIBI ODE ONI

25.Nje oti gbo nipa fetosomobibi ri? 1. Beeni ☐ 2. Beeko ☐

26. Nibo ni ona gbogi ti oti gbo nipa fetosomobibi? 1. Nipa ikede ☐ 2. asoromase ☐

3. Ni ile iwosan(Dokita tabi Noosi Dawaleko lori re) ☐ 4.Ninu Ebi tabi nipase ore ☐

5. Ona miran kosile.....

IPILE E

IMO OBIRIN NIPA FETOSOMOBIBI ODE ONI

27 Fetosomobibi ode oni meelo lo mo?.....

28 Daruko fetotosomobibi ode oni to mo.....

29. Iru fetosomobibi ode oni wo ni iwo mo

IRUFE	APEJUWE	BEENI	BEEKO
ISE ABE RANPE FUN DI DEENO OYUN	Obinrin le se ise abe ranpe lati le denon oyun nini		
OGUN ONIKORO	Obinrin le maa lo ogun onikoro lojojumo lati denon oyun nini		
IUD	Obinrin le gba ki dokita tabi noosi fi koili si oju ara ohun lati denon oyun nini		
ALABEERE	Obinrin le gba Abeere lowo awon eleto ilera lati denon oyun fun osu kan tabi jube lo.		
GBIGBIN SI INU ARA	Obinrin le gba ki Dokita tabi noosi fi awon ohun akanse pelebe si oke apa won lati denon oyun nini fun odun kan tabi jubee lo.		
ROOBA IDA BOBO FUN OKUNRIN	Okunrin le lo rooba idabobo agbejo ki o to ni asepo pelu obirin lati deeno oyun.		
ROOBA IDA BOBO FUN OBIRIN	Obinrin le fi Rooba idabobo si oju ara re ki o to ni asepo pelu okunrin lati deeno oyun		
LAKTESONA AMENORIA METODI(LAM)	Fun bi osu mefa leyin ibimo, obirin le maa lo ogbon ti o niise pelu fun-un fun-un omo ni oyan lore-kore losan tabi lale ti nkan osu reko fi ni tete pada kia.		
DAAFRAMU	Obinrin le gbe nkan pelebe ti o dabi abo romini si inu oju ara won ki won to ni asepo lati le deeno oyun		
NKAN IDEENO OYUN NI PAJAWIRI	Ni pajawiri leyin igba ti obinrin ba ni asepo ti ko dabobo ara re, obinrin lelo awon akanse ogun lati deeno oyun ti ko ba ju ojo marun lo leyin asepo ti ko ni idabobo		
Awon omiran jowo kosile			

30. Ni ero re, Igba wo loro pe obirin le bere si lo fetosomobibi leyin ni gba ti o bimo ni

(Ni osu) 1. Osu kan ☐ 2.Ojo Mokanlelogunji ☐ 3.Osu Meji ☐

4.Osu Met ☐ 5. Osu Merin ☐ 6.Osu Marun ☐ 6. Osu Mefa ☐

7.Osu Meje ☐ Omiran ko sile.....

31. Ki ni idi ti obirin fin lo fetosomobibi leyin omobibi larin odun kan tabi jubeelo?

.....

32. Nje o ti lo nkankan tabi gbiyanju ni onakona lati dena oyun ri?1.Beeni ☐ 2.Beeko ☐

33. Nje o ti lo eto fetosomobibi Kankan lati denon oyun ri? 1.Beeni ☐ 2. Beeko ☐

34. Toba je beeni, o to omo odun melo (ni odun) ni igba ti o koko lo?.....

35. Nje o nlo eyikeyi eto fetosomobibi ode oni ki o to loyun? 1 Beeni ☐ 2 Beeko ☐

36. To baje beeni,Daruko fetosomobibi ode oni to nlo kio to loyun?.....

.....

37. Ki ni idi ti o fin lo o tabi won ki o to di pe o loyun?(Jowo ko sile).....

.....

38. Nje o koju isoro kan tabi o ni iriri aise deede kan lehin ti o ti nlo? 1.Beeni ☐ 2.Beeko ☐

39. Ti o ba je beeni, iru iriri aise deede wo ni?

IRU ISORO	BEENI	BEEKO
Nkan osu poju bo se yee		
Nkan osu ko wa bo se yee		
Riro ni ile omo(Awon fetosomobibi ti won ti ki sile omo tele IUD)		
Nkan osu to n wa segesege (Awon ogun fetosomobibi ti o ti lo seyin)		
Se lo nmu o soran asanju (Awon ogun fetosomobibi ti o ti lo seyin)		
Se lo fi e ni irora apoju		
Ni awon aise dede miran kowonsile		

IPILE E:

ISEE NIPA LILO IFETOSOMOBIBI LEYIN OMO BIBI LARIN ODUN KAN

40. Nje o ti beere nkan osu re lati igba ti oti bimo? 1 Beeni ☐ 2. Beeko ☐

41. To ba je beeni, ni igba wo ni o se nkan osu re kehin? .....

42. Nje lowolowo, se ohun lo tabi ohun se nkankan lati deeno oyun? 1.Beeni ☐ 2.Beeko ☐

43. Nje o nlo eyikeyi fetosomobibi ode oni lati igbati o ti o ti bimo? 1.Beeni ☐ 2.Beeko ☐

To baje beeni, dahun ibeere nomba 44-49 ati ti o ba je beeko losi ibeere 49-56

44. Bawo ni o ti se tete beere si lo fetosomobibi ode oni si (ni osu) leyin igba ti o ti bimo?

.....

45. Bawo ni ose pe to ti oti nlo? (ni osu).....

46. Iru feto somo bibi ode oni wo ni ohun lo leyin igba ti o ti bi mo?

IRUFE	APEJUWE	BEENI	BEEKO
ISE ABE RANPE FUN DI DEENO OYU	Obinrin le se ise abe ranpe lati le denon oyun nini		
OGUN ONIKORO	Obinrin le maa lo ogun onikoro lojojumo lati denon oyun nini		
IUD	Obinrin le gba ki dokita tabi noosi fi koili si oju ara ohnu lati denon oyun nini		
ALABEERE	Obinrin le gba Abeere lowo awon eleto ilera lati denon oyun fun osu kan tabi jube lo.		
GBIGBIN SI INU ARA	Obinrin le gba ki Dokita tabi noosi fi awon ohun akanse pelebe si oke apa won lati denon oyun nini fun odun kan tabi jubee lo.		
ROOBA IDA BOBO FUN OKUNRIN	Okunrin le lo rooba idabobo agbojo ki o to ni asepo pelu obirin lati deeno oyun.		
ROOBA IDA BOBO FUN OBIRIN	Obinrin le fi Rooba idabobo si oju ara re kio to ni asepo pelu okunrin lati deeno oyun		
LAKTESONA AMENORIA METODI(LAM)	Fun bi osu mefa leyin ibimo, obirin le maa lo ogbon ti o niise pelu fun-un fun-un omo ni oyan lore-kore losan tabi lale ti nkan osu reko fi ni tete pada kia.		
DAAFRAMU	Obinrin le gbe nkan pelebe ti o dabi abo romini si inu oju ara won ki won to ni asepo lati le deeno oyun		
NKAN IDEENO OYUN NI PAJAWIRI	Ni pajawiri leyin igba ti obinrin ba ni asepo ti ko dabobo ara re, obinrin lelo awon akanse ogun lati deeno oyun ti ko ba ju ojo marun lo leyin asepo ti ko ni idabobo		
Awon omiran jowo kosile			

47. Kini idi ti o fin lo fetosomobibi lehin igba ti oti bimo?

IRU	BEENI	BEEKO
Lati ma tete bimo		
Lati deeno oyun nini		
Dokita tabi noosi gba o ni moran		
Ore re gba o ni moran		
Ona miran to baje jowo kosile		

48. Nje o ni Iriri odi nipa lilo fetosomobibi?? 1. Beeni ☐ 2. Beeko ☐

49. To baje beeni pe o ti ri iriri odi lori lilo fetosomobibi, Iru iri odi wo ni? Jowo kosile.....

50. Kini awon idi ti o ko fi fe lo fetosomobibi leyin igba ti o ti bimo tan

IRU	BEENI	BEEKO
Mo fe bi omo si		
Igbagbo tabi esin mi ko gbami laaye		
Iriri odi ti mo ti ri lori lilo fetosomobibi		
Oko mi ko fowosi lilo re		
Awon ore mi ko fowosi lilo re		
Eru pe o le ni ateyin bo aburu		
Awon idi omiran so		

IPILE E

ERO LATI LO FETOSOMOBIBI LEYIN TI O TI BIMO.

51. Nje o ni niero lati lo fetosomobibi kankan, laipe laarin igba ti ko ti ju odun kan lo si igba ti o bimo yii? 1. Beeni ☐ 2. Beeko ☐

52. Igba wo ni o gbero lati bere sin lo fetosomobibi?.....

53. Iru fetosomobibi wo ni oni lokan lati lo?.....

54. Kini idi ti o fi ni lokan lati lo ? .....

55. Bawo ni ose ro pee ase le gbe eto fetosomobibi ode oni lehin omobibi laruge?.....

.....

56. Ni ero tire, Bawo ni ose ro pe oyun airo tele se see deeno ?.....

.....

EESE FUN IFOWOSOWOPO YIN

APPENDIX VI

CERTIFTCATE OF ETHICAL APPROVAL

TELEGRAMS.....

TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5021 OYO STATE OF NIGERIA

Your Ref. No. _____

All communications should be addressed to ...

The Honourable Commissioner

Our Ref. No: AD 13/479/165

Date: 26th October, 2011

The Principal Investigator,
Department of Epidemiology, Medical Statistics,
and Environmental Health,
Faculty of Public Health,
P.M.B. 5116,
Ibadan.

Attention: Babadove Iyaduomi Wura.

Ethical Approval for the Implementation of Your Research Proposal in Oyo State

This acknowledges the receipt of the corrected version of your Research Proposal titled "*Prevalence and Practice of Modern Contraceptive Use among Postpartum Women in Selected Secondary Healthcare Facilities in Ibadan Oyo State*".

The Committee has noted your compliance with all the ethical concerns raised at the initial review of the proposal. In the light of this, I am pleased to convey to you the approval of the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

Please, note that the committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of the findings as this will help in policy making in the health sector.

Wishing you all the best.

OYO STATE RESEARCH ETHICAL REVIEW COMMITTEE
Signature & Date
MINISTRY OF HEALTH IBADAN

Mrs V.A. Adepoju
Director, Planning, Research & Statistics
Secretary, Oyo State Research Ethical Review Committee