PREVALENCE AND FACTORS ASSOCIATED WITH COVERT CONTRACEPTIVE USE AMONG CURRENTLY MARRIED WOMEN IN NIGERIA

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A DISSERTATION SUBMITTED TO THE DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS, FACULTY OF PUBLIC HEALTH, COLLEGE OF MEDICINE, UNIVERSITY OF IBADAN

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS OF PUBLIC HEALTH IN MEDICAL DEMOGRAPHY

AUGUST,2015

CERTIFICATION

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DEDICATION

This work is dedicated to the **ALL SUFFICIENT GOD**, who has always given me the strength to forge ahead.

ACKNOWLEDGEMENTS

My profound gratitude to God almighty for giving me the strength, knowledge and inspirations needed to carry out this research work. I thank you Lord,for your grace is always sufficient for me. All glory is to his name. Amen.

To my lovely Parents, Chief and Mrs.M.S. Ginika and my siblings. I thank you for always being there for me.For your love and care, prayers, encouragements, financial and moral support all the way never faltered. May the good Lord continue to bless you and grant all that your heart desires.

My sincere appreciation to my one and only teacher, mentor and supervisor, Dr.J.O. Akinyemi, for his guidance, inspirations, encouragements,patience and for always making himself available in ensuring that I had a commendable work. I say a big **THANK YOU SIR.** God will always bless you and take you to greater heights.

My debt of gratitude goes especially to Dr. A.S. Adebowale, you were there for me right from the conception of my programme - I thank you immensely. I also appreciate the enormous efforts all my lecturers in and out of the department, for the knowledge impacted on me. I will be ever influenced by their incisive intelligence.Special thanks also to the non-teaching staffs especially Mr. DotunOlusanya, Aunty YinkaAdekunle, MrsAdedokun, Mr. Nathaniel, Mr. Aduroja, Mr. Ogunlabi, Mr. Oyeyemi(Health promotion dept.) who were always willing to attend to us.

To all those that have contributed to my success and always made sure I had a pretty stay both in and out of school, you have been so wonderful. **Gracias!!!**

Special thanks to my friends and colleagues especially my class rep- Mr. Livingstone DavidSalu (knowing you has really made a difference (Na godesosai),TayoAkinlade, Bolaji●jerinde,Saka,TundeRaimi (my padi), Enebechi Constance,Biostatistian- Femi, Deji, Ayo, Tinu, my sweet Alhaja ,all other friends and the rest of EMS 2011/2012 set, you guys rock.

Finally, to so many others too numerous to mention, I appreciate you all.

ABSTRACT

Unplanned and untimed pregnancy poses a major challenge to the health and wellbeing of women of reproductive age in developing nations. This has prompted the practice of Covert Contraceptive Use (CCU) especially in settings where contraceptive utilisation is low or culturally unpopular in Nigeria. However, previous studies have not adequately explored the major factors that play important roles in covert use of contraceptives. This study was conducted to determine the pattern and factors associated with CCU among married women in Nigeria.

This retrospective cross-sectional study utilised data from the 2008 Nigeria Demographic and Health Survey (NDHS) with questions on CCU. Data for 3439 currently married women of reproductive age (15-49 years) who were using any method of contraception and their spouses were analysed. The data was weighted to adjust for the stratified two-stage cluster sampling technique adopted during the survey, consisting of Enumeration Areas (EAs) and Households (HH). The dependent variable was CCU and was based on current use of any method of contraception and husband's knowledge of respondent's use of contraception. The independent variables were demographic, socio-economic and fertility behavioral characteristics. Pregnant or menopausal women and women not currently using any method of contraceptive within two months before the survey were excluded. Data were analysed using descriptive statistics, Chi-square tests and multiple logistic regression models at $p = 0.05$.

Mean ages of the women and spouses were 33.1±7.3 and 41.7±9.8 years respectively. About 55% of the respondents were urban dwellers, while over 70.0% were from the Southern region (S/S, S/W and S/E) and 72.9% respondents were found in the rich wealth quintile. Overall, 17.3% of the respondents were covert users, with CCU more prevalent among

respondents aged 25-34 years (18.9%) and those who had more than four living children (19.5%). About 18.0% of respondents' spouse desired more children while 26.1% of the respondents experienced sexual violence. The methods most covertly used were contraceptive injections (26.6%), lactational amenorrhea (21.8%), and contraceptive pills (14.7%). There was an association between CCU and ethnicity as CCU was higher among the Hausas (32%), followed by the Yorubas (15%), and lesser among the Igbos (12.2%). Practice of CCU was significantly higher among respondents whose spouses' age was >50 years (22.1%) compared to those <30 years (16.6%). Respondents who attained a higher education were less likely to practice CCU compared to those who had no education (OR=0.31, CI=0.18-0.52). Respondents with higher education (OR=0.44, CI=0.19-0.97), desiring more children (OR=0.39, CI=0.21-0.72) and who were involved in decision making for contraceptive use (OR=0.06, CI=0.04-0.09) were less likely to practice CCU. Respondents experience of sexual violence (OR=2.04, CI=1.22-3.39) and husbands desire for more children (OR=2.16, CI=1.46-3.19) were significant risk factors for CCU.

The high prevalence of covert contraceptive use observed was significantly associated with spouses' desire for more children and respondents experience of sexual violence. The identified factors have implications for policy makers and concerned stakeholders in addressing these challenges to married women of reproductive age.

Keywords: Covert contraceptives use, Women of reproductive age, Sexual violence, Nigeria.

Word count: 485

TABLE OF CONTENT

CHAPTER FOUR

RESULTS

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

LIST OF TABLE

LIST OF FIGURES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Family planning which is achieved through the use of either modern or traditional method of contraceptives has become the interventions of choice to control population growth (Ross et al., 2005). It is believed that child spacing and the timing of every birth can improve survival chance of the child and can maintain good physical and emotional health for the whole family (Biruk et al., 2007). According to the United Nations evaluations, family planning accounted for two-thirds of the decline in Total Fertility Rate (TFR) in the developing world in the last decades (United Nations, 2013). Sub-Saharan Africa (SSA) has been found to have the highest fertility rates in the world with an overall total fertility rate (TFR) estimated at 5.10 for the period 2010-2015, and of the ten countries with the highest TFRs in 2005-2010, eight are in SSA (United Nations, 2013). Studies on the relationship between fertility and contraceptive use of some 100 countries surveyed in the 1990s found that in countries where contraceptive prevalence is high, the total fertility rate (TFR) is low; where contraceptive prevalence is low, TFR is high.

Nigeria is one of the countries with the highest fertility and population growth rates in Africa (PRB, 2011). The Total Fertility Rate (TFR) in Nigeria is 5.5 children born/woman (NDHS, 2013), this means that at current fertility levels, Nigerian woman who is at the beginning of her childbearing years will give birth to 5.5 children by the end of her reproductive period.The 2008 National Demographic Health Survey (NDHS) revealed that fertility in Nigeria has remained at a high level over the last 17 years from 6.01 births per woman in 1991 to 5.7 births in 2008. On average, rural women are having two children more than urban

women (6.3 and 4.7 children respectively). The 1990, 1999, 2003, 2008 and 2013 estimates of TFR are put at 6.01, 5.2, 5.7, 5.7 and 5.5 respectively (NDHS, 1990; 1999; 2003; 2008 and 2013). However, the potential for contraceptive use to reduce these rates is very great.

Contraceptive prevalence rate (CPR) is the percentage of women who are practicing any form of contraception. It is usually measured for married women age 15-49 only (NPopC and ORC Macro 2009). Contraceptive prevalence rate is a key indicator of reproductive health, development and empowerment of women (WHO, 2006). NDHS (2013) reported that overall, 16% of married women in Nigeria are using a contraceptive method indicating only a two percentage point increase from the 2003 NDHS, this is lower than the current SSA average of 18% (Population Reference Bureau, 2011).In spite of the high awareness of contraceptive methods among Nigerian adolescence, youths and married couples, the use of modern contraceptives in the country has remained low (Oye-Adeniran et al., 2006; NPopC and ICF Macro, 2009; PRB, 2011). The low rate of contraceptiveuse in Nigeria results in high fertility rates, particularly in the rural areas and the northern part of the country (Maaji, 2011). Studies have linked the Northernregion's high fertility to early marriage, lack of informationabout and access to family planning methods,men's dominant roles as household decision makers, and polygyny(Ishaku and Ramarao, 2012).

According to the 2008 United Nations reports, contraceptive use varies according to income, education, ethnicity, proximity to clinics, religious and cultural values placed on children, and strength of family planning programs (United Nations, 2008). One issue that have been causing family dissolution has been increase influence of men's preferences and power on reproductive outcomes especially in SSA countries such as ideal number of children and child bearing, sex preference, family planning views or contraceptive use among

others(Bankole 1995; Isiugo-Abanihe, 1994). In view of all these, many more problems have ensued; one of them is what is called CovertContraceptive Use.

Covert contraceptives use is the use of any form of contraception without the knowledge of the other partner/spouse.Covert (Secret or clandestine) use can also represent an individual's decision to practice contraception without direct involvement of the spouse.Secret use of contraception is very common predominantly among women. Women practiced contraceptives secretly without the knowledge of their partners or with their husbands' ignorance of specific methods in areas where contraceptive prevalence rate is low (Biddlecom and Fapohunda, 1998a, 1998b).Studies have shown that where spouses differ in preferences and attitudes toward family planning, there is likelihood that many women might not use modern contraceptives because their partners disapprove of such methods; or alternatively, that they might obtain family planning services secretly and use concealable methods of contraception (Belohlav and Maheshkarra, 2013).

In SSA, the level of covert use has been estimated to be 6-20% of all female contraceptive users (Biddlecom and Fapohunda, 1998). According to studies conducted in urban Zambia, Uganda, and rural Kenya, the level of covert use is estimated to be 7%, 15%, and 20% of all contraceptive users respectively (Becker andCostenbader, 2001). In Nigeria, NDHS (2008) reported prevalence of secret use as 7% of currently married women age 15-49years who were using a method of contraceptive. Prevalence was more pronounced in the North West zone (9.3%) while it is lowest in the South East zone (3.0%).Few studies have identified major factors that play important roles in the use of contraceptives secretly by women of childbearing age all over the world. The identification of these factors has major relevance in the planning of suitable intervention measures in family planning services. Therefore,

thisstudy explores factors that are associated with secret use of contraceptives among currently married women of reproductive age (15-49yrs) in Nigeria.

1.2. Statement of the problem

NDHS (2008) reported the prevalence of secret use of contraceptives among Nigerian married women as 7% while overall prevalence of a contraceptive method use is 16% and current modern contraceptive use is 10% (very low), despite that about 85% of all women and 95% of all men knows at least one method of contraception (NPopC and ICF Macro, 2014). Inadequate contraceptive use implies that the likelihood of increasing number of children born to women, increased morbidity, infant and child mortality and burden on the health system is high.

Secret use of contraceptives may be gradually taking its course in Nigeria given the very little improvement in the use of contraceptives from 13% in 2003 to 16% in 2013 (NDHS 2013). The factors driving secret contraceptive use are unclear: Medical, economic, cultural, and social barriers to contraceptive use have been highlighted in literature; however, studies have not provided in-depth understanding of secret contraceptive use among married women of reproductive age (15-49yrs) in Nigeria.

There is no data available to explore covert contraceptive use by married women in Nigeria except for 2008 NDHS which asked married respondents if their husband/partner is aware of their contraceptive use. Consequently, few of the studies on covert use in Sub-Saharan Africa and Africa at large do not include the Nigerian experience.

In addition, ample qualitative studies have been done on contraceptive use in Nigeria. Although these studies provide insight into possible motives to use particular contraceptive methods, but they do not show how often women take particular motives into consideration or use them secretly.

This has therefore necessitated the exploration and examination of factors influencing secret contraceptive use among currently marriedcontracepting women of reproductive age in Nigeria.

1.3. Justification

Contraceptive use has been identified as the most important proximate determinants of fertility (Bongaarts et al., 1994). Understanding the pattern of secret contraceptive use among married women in Nigeria could provide useful information for family planning program personnel to assess and adjust their current strategies, understanding the demand for certainmethods of contraceptives and devise strategies that will promote contraceptive use. This will lead to reduction in fertility as part of the national population policy on family planning, whose desire is to achieve a reduction in total number of children born per woman to four children (NPopC and ICF Macro, 2014).

Family planning is an essential tool to raise the status of women. Without the ability to space and limit births, poor reproductive health can make women's empowerment difficult if not impossible (FHI, 2012). Also, unexpected or unplanned pregnancy poses a major public health challenge in women of reproductive age, especially in developing countries. It has been estimated that of the 210 million pregnancies that occur annually worldwide, about 80 million (38%) are unplanned, and 46 million (22%) end in abortion. More than 200 million

women in developing countries would like to delay their next pregnancy or even stop bearing children altogether (UNFPA, 2011).

Though women are seen as beneficiaries of family planning, too little attention has been paid to assessing their behavior in relation to contraceptive methods in Nigeria (Jimmy et al., 2013) therefore,evidence about why contraceptives are used covertly is urgently required to accelerate progress towards achieving the targets in the Health Sector Strategic plan in preserving women's right to privacy if she does not want her partner involved in her reproductive health.

Finally, this study is intended to serve ultimately as a guide for population and demographic planning and also help policymakers in policy formulation aimed at improving contraceptive practice in the bid to achieving the Millennium Development Goals (MDGs) 4 and 5 which concerns the need to reduce child mortality and improve maternal health. However, other MDGs such as the eradication of extreme poverty and hunger (Goal 1), achievement of universal primary education (Goal 2) and promotion of gender equality and empowerment of women (Goal 3), also relate to contraceptive use and family planning (Charles and Dawn, 2010).

1.4. Research questions

The study seeks to provide answers to the following questions:

1. What is the prevalence of secret contraceptive use among currently married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria?

2. What are the pattern/methods of secret contraceptives commonly used among currently married women of reproductive age (15-49yrs)currently using a method of contraceptive in Nigeria?

3. What demographic factors are associated with the use of contraceptives secretly among married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria?

4. What socio-economic factors determine use of contraceptives secretly among married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria?

5. What behavioral factors are associated with the use of contraceptives secretly among married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria?

1.5. Objectives of the study

The general objective of this study is to determine the prevalence and factors associated with secret use of contraceptive among currently married women of childbearing age (15-49yrs) in Nigeria.

1.5.1. Specific objectives:

1. To evaluate the prevalence of secret contraceptive use among currently married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria.
2. To describe methods commonly used secretly among currently married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria.

3. To identify socio-demographic factors associated with the use of contraceptives secretly among currently married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria.

4. To assess the socio-economic factors that determines the use of contraceptives secretly among currently married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria.

5. To describe fertility-behavioral factors associated with the use of contraceptives secretly among currently married women of reproductive age (15-49yrs) currently using a method of contraceptive in Nigeria.

1.6. Analytical framework.

Figure 1 presents an analytical framework which builds on existing knowledge of the factors associated with contraceptive method use. The framework is based on the modified form of the health belief model proposed by Glanz et al. (2002) and also incorporated loosely with the theory of reasoned action formulated in 1980 by Martin Fishbein and IcekAjzen which attempts to explain and predict health behavior and attitudes. The health belief model is based on the understanding that a person will take a health related action if that person perceived that a negative health condition can be avoided, has a positive expectation that by taking recommended actions, he/she will avoid a negative health condition (benefits) and believes he/she can successfully take recommended health action which are more likely to affect the preventive actions. For example; using contraceptionwhich can prevent a specified condition such as unplanned pregnancy (Glanzet al.2002). These models have been applied and tested with regards to the use of contraception. Several studies have shown a significant relationship between attitude and contraception intention and behavior (Bongaarts and Johansoon, 2000).

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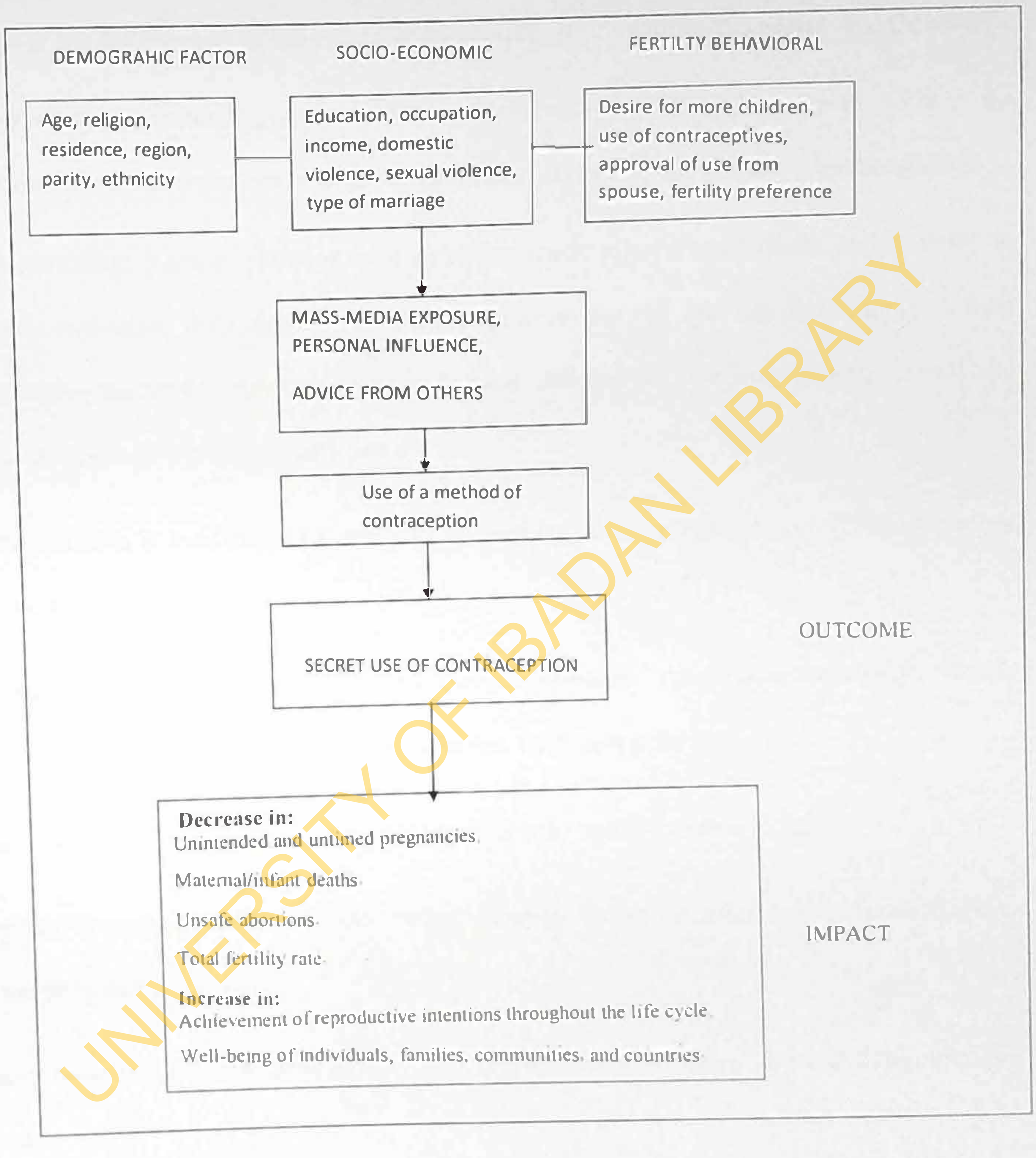
Since individuals act and react within a society and culture, the framework posits that some factors operate through intermediate factors that generally act as catalysts to increase or decrease contraceptive use among women. These factors are both collective and behavioural in nature. The model has been adapted because it helps to maintain an ability to evaluate or assess benefits and make changes when confronting health risks and it includes relevant determinants and outcomes for contraceptive decision-making.This reflects that contraceptive decision-making is not a once in a lifetime phenomenon, but a dynamic process dependent on life stage, situation, experiences, knowledge and new information (Free et al.,2005). These experiences are taken into account when a woman decides on a new course of action regarding birth control. Utilization of a contraceptive method secretly is determined by a lot of factors ranging from socio- economic, demographic, behavioral and many others which interact with each other as illustrated below.

Figure 1: FRAMEWORK OF DETERMINANTS AND OUTCOMES OF WOMEN'SCONTRACEPTIVE DECISION MAKING



- **Adapted from modified Health Belief Model (Glanz et al., 2002).**

1.7. Operational definition of terms

Contraceptives: these are methods used to delay or avoid getting pregnant. It is aimed at preventing the fertilization of the ovary or preventing the contact of the sperm and the ovary.

Covert/ secret/ clandestine contraceptive: this is the use of contraceptives without the knowledge of the other partner. Covert or secret or clandestine use is used interchangeably.

Familyplanning: Family Planning is a concept which allows individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. It also means the planning of when to have children and the use of birth control and other techniques to implement such plans.

Injectables: this is a method of contraceptive used by taking progestin injections for one or more months

Modern contraceptive methods: This include condom, diaphragm/foam/jelly, female condom, female sterilization, implant, injectables, IUD, and pills.

Parity: this is the number of living children previously born alive to a woman.

Pills: this is another method of contraceptive taken before or after sexual intercourse to prevent pregnancy.

Pronatalism: this explains men fertility preference to want or desire more children than the women.

Spousal communication: this explains the discussion and agreement between couples or partners on the use of contraceptives

Sexual violence: the use of coercion to engage a partner in sexual acts against her will.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

Contraceptives are used for the achievement of family planning thus; acquiring knowledge about fertility control is an important step towards gaining access to and then using a suitable contraceptive method in a timely and effective manner (NDHS, 2013). Family planning services have become the interventions of choice to slow population growth. It is a conscious effort by a couple to limit or space the number of children they want to have and also taking into account the health of the mother as well as that of the last child. It also includes the choice of an appropriate method that will help the woman realize her goal for using contraceptives (Naomi and Teri, 2004).

2.2. Contraceptive use in Nigeria

Contraceptive use assists couples in achieving their desired children either by proper spacing or limiting pregnancies, which invariably protects the health of the mother, and ensures optimal growth and development of the child (Arab et al., 2011). Contraceptive use in developing countries, Nigeria inclusive is far low than what is achieved in the developed countries. The low usage can be attributed to the cultural and religious inclination of the users especially in Africa. Contraceptive use and choices vary widely in Nigeriaaccording to type of health facility, geopolitical zone andwithin urban or rural settings(Monjok et al., 2010).Besides, no ideal contraceptive method mix has been established;the range of methods available and their accessibility also contribute to contraceptive use (Ross and Hardee, 2012).

The contraceptives use by the husband, the wife or both couple depends largely on the male partners' approval, their religion and the social organization of their community (UNFPA, 2010). Research in Nigeria indicates that more than 60% of women with an unplanned pregnancy are not using any form ofcontraception (NPopC and ICF Macro, 2014).

The use of contraceptive methods among currently married women increases with age and it is higher among sexually active unmarried women than among currently married women (68%against 15%)(NDHS, 2013) from 2% among women age 15-19 years to 22% among women age 40-44 years, after which it falls to 13 percentamong women age 45-49(NPopC and ICF Macro,2014). Most women currentlyusing contraception use a modern method (11%), while 5% use traditional methods.

The Demographic and Health Survey of 2013 revealed that at least 85%of all women and 95% of all men knowing at least one method of contraceptioncompared to72% of all women knowing at least onemethod of contraceptive in the previous survey. However, only 15% of all women reported ever using a method of contraception at some time, 10% used at least a modern method and 5% used at least a traditional method. The overall contraceptive use prevalence among all women in Nigeria was 16% (NDHS, 2013). This is an indication that prevalence of use is low.Interestingly, awareness of contraceptive methods is almost universal in Nigeria, yet women remain vulnerable since knowledge about contraceptives has not transformed into practice (Monjok et al., 2010). Recent survey, NDHS (2013) have shown that the most popular contraceptive method use- modern method (10%): is the injectables (3%), male condom use is the next most common (2%), followed by the pill (2%) and traditional methods (5%). This has slight changes from the reports of 2008 where the male condom was the most commonly used modern method (5%), followed by injectables and pills (3% and 2%, respectively).

The Federal Government of Nigeria, through the Federal Ministry of Health (FMoH), isunswerving in its efforts to ensure that Nigeria attains the Millennium Development Goals. In line withthis, the Federal Ministry of Health distributed free contraceptives to states and to family planning andchild spacing programmes in April 2011(FMoH, 2013).This was due to cost barriers associated with contraceptive utilization.

Several factors have been stated as responsible for this trend in use, though many are not testedempirically. While some scholars posit that residence, zone, education are part of the factorsresponsible for differentials in prevalence and use, others are interested in location of clinics andcost and that the reason for non-use of contraception in Nigeriagenerally point to women's perceived lack of need, fear of side effects, opposition tocontraception on personal or religious grounds and spousal negative attitude to contraceptive use (Monjok et al., 2013). Lack of knowledge about contraception, its use, or its availability, health concerns, limited supplies and high costs, cultural/ personal objections, discontinued use of contraception are also contributing factors. Demand for family planning consists of both met need (current use of family planning) and unmet need (Lynn et al., 2013).

2.3. Methods of contraception

Methods of birth control have been known from olden times, but it is difficult to establish to what extent they may have been used (Colen and Sheila, 2001). There are many factors that are associated with contraceptive method use to prevent or delay pregnancy.Importantfactors which have been found to be associated with contraceptive method use include age,marital status, education, religiosity, family size (number of children ever born), andfertility intentions.Broadly, contraceptive methods can be classified into two groups; modern contraceptive method and traditional contraceptive method but the Nigeria Demographic and

Health Survey (NDHS), 2013 identified contraceptive methods as modern, traditional and folkloric methods. Modern methods include female sterilization, male sterilization, the pill, intra-uterine device (IUD), injectables, implants, male condom, female condom, diaphragm, foam/jelly, lactational amenorrhea method (LAM), and emergency contraception. Methods such as rhythm (periodic abstinence) and withdrawal were grouped as traditional methods (NPopC and ICF Macro, 2014).

2.4. Unmet need for family planning

Unmet need for family planning is defined as the percentage of married women who want to space their next birth or stop child bearing entirely but are not using contraception(NPopC and ICF Macro, 2014).The unmet need for safe and effective contraceptiveservices throughout the world is overwhelming. Despite theirdesire to avoid or delay pregnancy, roughly 222 millionwomen in developing and less developed countriesrely on traditional methodsonly, which have a high failure rate, or do not use anycontraceptive method at all (UNFPA, 2012). There is unmet needs among both married and unmarried women. In Africa, about 22% of married women are at risk of an unplanned pregnancy but are not using contraception; this is only a small decline from the level a decade earlier (24%) (WHO, 2011). In Asia, Latin America and the Caribbean region with relatively high contraceptive prevalence, the level of unmet needs are 9% and 11% respectively (WHO, 2011).

Couples with an unmet need for family planning are subdivided into 2 groups:

1. Women with an unmet need for spacing are those who are fecund (able to become pregnant)but are not using family planning.
2. Women with an unmet need for limiting are those who are fecund (able to become pregnant)but are not using family planning.

In Nigeria among married women, unmet need for family planning is 16%, with 12% expressing a desire to space.Overall, unmet need decreased from 22 percent in the 1990 NDHS to 16 percent in 2013 withtrends-22%, 20%, 18%, 20% and 16% respectively (NDHS1990,1999, 2003, 2008 and 2013).This trend shows that family planning programme is making an impact though there isstill a large unmet need for contraceptive use in Nigeria. Contraceptive use to limit births has a greater impact on fertility rates than using contraception to spacemoreoverit is a major factor driving the fertility transition (Lynn et al., 2013). NDHS (2013) reports that unmet need for spacing is high among younger women age 15-34yrs (13%-16%), while unmet need for limiting childbearing is high among older women age 35-49yrs (7%-10%). Succinctly, the level of unmet need for family planning (16%)approximates the level of contraceptive use (16%). If all married women with an unmet need for family planning were to use a contraceptive method, the contraceptive prevalence rate for any method would increase from 16 to 31 percent (NPopC and ICF Macro, 2014).

Factors such as traditional beliefs, religious barriers, poor quality of available services, limited access to contraception, fear of side effects and lack of male involvement have been found to weaken family planning interventions leading to this high unmet need (WHO, 2011). Therefore, addressing the unmet need for contraceptive information and services would result in roughly 22 million fewer unplanned births and satisfying the current unmet need for contraceptives could prevent roughly 150,000 maternal deaths and 25 million induced abortions worldwide annually (UNFPA, 2010).

2.5 Prevalence of Secret Contraceptive Use

In a society where there is low prevalence of contraceptive, secret use of contraceptive is high, mainly in Sub-Saharan Africa where women have low autonomy (Biddlecom andFapohunda, 1998; Population Reference Bureau, 2011).Most of all the research on contraceptives use (secretly) concentrates mostly on Africa/sub-Saharan Africa experience due to SSA having the highest fertility in the world with an overall total fertility rate (TFR) estimated at 5.10 (United Nations, 2013) and with low prevalence rate of contraceptive use at 18%(Population Reference Bureau, 2011).

In sub-Saharan Africa, the prevalence of covert use of contraceptives, where contraceptives are used without spousal knowledge has been estimated to be 6-20% of all female contraceptive users (Biddlecom and Fapohunda, 1998). In urban Zambiacovert contraceptive use is 7% while it is 20% in rural Kenya. Another study in Uganda estimated covert use of contraceptives at 15%, with a range from 7% to 18% by urban and rural areas respectively (Blanc et al. 1996). It is worthy to note that only few extensive studies have been done specifically addressing this social problem (Biddlecom and Fapohunda, 1998; Konate and Castle, 1999; Biruk et al., 2005); others have been partially carried out in line with other major issues. All these studies have been able to bring out the various factors underscoring the use of contraceptives secretly. Conversely, some references have been made to the secret use of contraceptives, mainly in Latin America and sub-Saharan Africa (Blanc et al., 1996; Bledsoe and Hanks, 1998; Renne, 1993; Rutenberg and Walkinson, 1997; Watkins et al., 1997; Zulu, 1998).

Studies have shown that covert contraceptive use is inversely related with overall Contraceptive Prevalence Rate (CPR). For example, in Brazil, where the prevalence of family planning among married women is around 70%, covert use comprises only 2%. By contrast,

in the Central African Republic, where contraceptive prevalence is just 3% among all married women, covert use stands at 52% (Biddlecom and Fapohunda,1998) while in Nigeria, it was estimated that overall7%of the currentlymarried women reported that their husbands or partners does not know about their use with highest use in the North/West and lowest in the South/East zones (9.3% and 3.0% respectively), with a range from 7.4% to 6.4% rural and urban areas respectively (NDHS, 2008).Gasca (2013) reported that estimates of female covert use among nine counties in SSA (Burkina Faso, Ethiopia, Madagascar, Malawi, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe) increased, as compared to all female users of modern contraceptives; four countries had 12-24%, three countries had 32-39%, and two countries had 42-49% female covert use. The lowest rate was in Rwanda and the highest in Burkina Faso; unfortunately Nigeria was not included in the analysis.

Women in thedeveloped, developing as well as undeveloped regions of the worldwould choose a contraceptive method if it was perceived as easy to use, accessible, affordable, had minimal side effects, one they can control themselves and can be reversed, thus avoiding spousal quarrels or marital dissolutions (Caldwell and Caldwell, 2002; Godfrey et al.,2011). Covert contraceptive usewas found to be usually justified by both women andmen on the grounds of protecting the welfare of living children rather than as a woman`s right to make reproductive decisions on her own. Research has established that the prevalence of covertuse will certainly decline as contraceptive use continues to rise in many countries (Biddlecom and Fapohunda, 1998).

2.6 FACTORS INFLUENCING SECRET USE OF CONTRACEPTIVES

2.6.1. Difficulties in spousalcommunication about contraception

The husband's view on family planning have been consistently found to be asignificant factor affecting contraceptive use in several countries including Indonesia,Sub-Saharan Africa, the Philippines, India, Nepal, Pakistan, Kuwait, and Mali (Kaggwa et al., 2008).

Biddlecom and Fapohunda (1998)observed in a study on Zambian married couples that nearly 30% of couples have discrepant reports of current contraceptive use. Among these, 7% of wives reported that they are using contraceptives without their husbands' knowledge. The level of spousal disagreement about contraceptive practice was 23% for women who use openly and 42% percent for non-users. Reasons that were given by respondents in Zambia span from husbands' disapproval to spousal communication. Women were asked what they would do if husbands disapproved of their using contraceptives, the majority of women (57%) reported that they would use contraceptives without the knowledge of their husbands. Another 20% said they would try to convince their husbands, thus providing some indication that husbands' disapproval is a barrier.

In a Malian study, Konate and Castle (1999) revealed that sometimes new users of a contraceptive method are secret users, especially when they are the first in their community to make a decision that contradicts social and cultural norms. It was found in the study that about one-third of 55 first-time users age 18-43years had come to a family planning clinic without their husbands knowledge, it was also shown that a high proportion (17/55) of them used contraceptives secretly. About 7 of the 17 covert users said they were too shy or too afraid to discuss family planning with their partner, and the remainder had tried but encountered disapproval, including concern that family planning violated religious teachings.

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The study noted that reasons for covert use included husbands' disapproval of contraception and difficulty between partners in communicating about family planning. Chikovore et al. (2002) posit that in the absence of verbal communication on sexual matters, women and men resort to what is called "hide-and-seek" strategies, where women acquire and use contraceptives secretly while men search for evidence of such use.

Likewise in Navrongo-Ghana (a rural setting), Philips et al. (1997) found that 57% of the husbands were more likely to deny that their wives were using contraceptives when they were asked about their contraceptive use status. Moreover, secret use of contraceptives by the wives was 23%. This waslikely due towives' perception of their husbands' opposition to contraceptive use which makes the discussion of such matters with husbands difficult (Barnett, 1999).Similarly, Biruk and Assefa (2007) in a study conducted inNazareth/Adama town in Ethiopia indicated that 36% of the respondents had not discussed about family planning with their husband within the past 12 month in which the survey was conducted.

The study showed that the proportion of wives who reported that their husbands do not know about their use of contraceptives ranges between 8.7% and 22.7%.Moreover, problematic spousal communication was reported to be a major reason for the discrepancy in responses.

2.6.2 Husband pronatalism

Husband's desire for more children was reported by Barnett (1999) to motivate women in using contraceptive covertly. Biddlecom and Fapohunda (1998) also reported husband pronatalism as encouraging the use of contraceptive covertly in a study carried out in Zambia. According to Biruk et al.(2005), women's perception about the fertility desire of their husbands is one factor influencing the practice of contraceptive secretly. They noted that women who perceived that their husband needs more number of children were more likely to

use contraceptive with partial or complete ignorance of their husband. As stated by participants through FGD;

> ***"They do not know the burden of frequent birth and they consider the thought of having child only from economic point of view not from the mother's health, so it's better to use family planning methods with the ignorance of the husband".***

Also, Imburki et al, (2010) in a study in Kericho-Kenya, noted that men would oppose contraception if they did not yet have a male child; the importance of the male child, among other factors, was perceived to affect marital stability as women relayed their concerns about the possibility or threat that a husband would get another wife if they disappointed him. This concern as well as anxieties about spousal disapproval in general led several women to discuss measures for using contraception covertly, potentially influencing method choice. Degler (1980); Mason and Taj (1987) observed that women are more concerned with their family size than men and thatwomen wants fewer children than do their husbands due to health and time costs associated with frequent childbearing.

2.6.3 Type of contraceptive methods

The use of specific types of contraceptive was reported as a significant factorin Zambia where secret use was linked to the predominant use of specific contraceptive methods. Most women in the Zambian study who say they were using a contraceptive method without their husbands' knowledge used methods that could be hidden easily from the husband: the pill, injectables, and natural methods such as periodic abstinence (Biddlecom and Fapohunda, 1998).Research has shown that the most popular modern contraceptives in areas where women have least control over their fertility are the ones that cannot easily be detected, in particular, injectable (Wright, 2002). This is closely related to what was reported by Ashford,

2003; Biddlecom and Fapohunda,, 1998b; Caldwell and Caldwell, 2002; UNFPA, 2010; Luck et al., 2000; Phillips et al., 1988; Simmons et al.,1988; United Nations, 2011; USAID/Kenya, 2010b). Also, in countries such as the Gambia and Bangladesh, hormonal methods have encouraged and promoted family planning because such methods can be easily concealed from disapproving spouses, relatives, friends, and neighbors.

Becker (2001) revealed that most women who are covert users in Mozambique reported using female sterilization and injectables while those in Tanzania and Mali reported more of pill usage. He noted that fewer than 10% of couples in all countries would engage in covert use of contraceptives. Abstinence was also reported by a relatively high proportion of women in these countries (Becker, 2001). In Tanzania, Schuler, Rottach, and Mukiri (2009) ,reported thatwomen opting for discreet use of contraception tried to choose methods presumably with fewer negative effects to be able to continue secretly using contraception, but also to avoid conflict in case of negative contraceptive outcomes. The verbatim quote below from a

34year old Tanzanian female user of injectable contraception:

> ***...Mostly, because we do not let our husbands know, we choose the method that has few negative effects so that the husband does not know...***

2.6.4 Place of residence

The prevalence of covert use among married women also varies by place of residence, with rural users reporting higher rates than those who live in urban settings; becauseoverall family planning prevalence in rural areas tends to be lower (Greene and Biddlecom, 1997). A study in Uganda found that 15% of women who were using contraceptives were doing so without their partner's knowledge (Blanc et al., 1996).Blanc and colleagues noted that this fraction was much higher inrural areas than in urban areas that is, 18% to 7%. Likewise, a study in

rural Kenya setting showed that 20% of contraceptive users admitted to using it secretly (Watkins et al., 1997). Also,7% of urban women using a method of contraceptives in Zambia said they were covertly using it; a figure similar to that observed for urban women in Uganda.Whereas, in Nigeria, 7.4% of female respondents who reported use of contraceptives secretly reside in rural areas while 6.4% were urban dwellers (NDHS, 2008).

Additionally,regional differentials were also found to be associated with covert contraceptive use as level of contraceptive varies significantly across regions. In Uganda, Blanc et al., (1996) reported that female covert users varies significantly according to regional difference: about 16% in the North, 11% in the South, and 4% in the central region. Blanc and colleagues observed that the regional difference was linked to regional difference in agreement on contraceptive use. Monjok and colleagues also posit that regional difference for contraceptive utilization may be connected to difference in culture, religion as well as acceptance and agreement on contraceptive (Monjok et al., 2010).

2.6.5 Fertility intentions and desire/ birth intervals

Fertility intention is an important predictor of subsequent reproductive behavior, and contraceptive use intentions are an even better predictor, particularly among women who want to limit future births (Van et al., 2013).However, contraceptive decision-making have been found to remain a deeply personal and sensitive issue that often involves religious or philosophical convictions (Avidime et al., 2010).Westoff and Bankole (1995) demonstrated that fertilityintentions of women vary with the age of women,number of living children, place of residence, educationand exposure to media.Accordingto Gray and McDonald (2010), contraceptive use is associated with fertility desires or intentions and closely related to reproductive life course stage and not only to age. Oye-Adeniran et al (2004) found that large

number of Nigerian women experience unwanted, unintended or ill timed pregnancies and births. This findings corroborate with a survey in Southwestern and Northern Nigeria, where at least 20% of womenhad ever been pregnant when they did not want to (Wall, 1998)hence, motivating the use of contraceptives secretly. Importantly, Lucke et al. (2011) noted that the three main methods mostly used covertly (contraceptive pill, injectables and LAM/abstinence) shows that the use of these methods varies not only by age but also by fertility intentions.

Studies have shown that birth interval affects the use of contraceptive covertly.Bledsoe et al.. (1998),revealed that the proportion of covert modern contraceptive use increases as birth interval lengthens.

2.6.6 Women in violent relationship

Fears of domestic, sexual and intimate partner violence have been reported in many settings as a barrier to contraceptive use (Williams, 2008). Sexual violence includes a range of sexual activity that covers unwanted kissing, touching or fondling, sexual coercion or rape (Baram, 2007). In Africa, evidence of the relationship between domestic or sexual violence and contraceptive use remains scarce. Few researchers like Alio et al (2009), found that women who had experienced intimate partner violence were more likely than others who had not, to report contraceptive use.

Nonetheless, Bawah et al., (1999) noted that women may not entirely be defenseless in the face of their husbands' disapproval of contraceptive use. The probable explanation for this was that covert use of a contraceptive method was used as a last means to achieve their fertility desire. Ghanaian womenreported that the practice was also used as a means to avoid conflict or violence from their husbands or partners.

Similarly, in a study conductedin Bolivia (La Pas, El Alto and Santa Cruz),intimate partner violence was reported as the major factor that affect partners decision to use contraceptive method which however have further influence on covert use of contraceptive method in the area (McCarraher et al., 2006). The findings showed that 19% of the women used pill covertly. These women were more likely to have experienced partner violence than women whose partners knew of their pill use.

2.6.7 Female empowerment and autonomy

Studies have shown that some women do not wish to have their husbands involved in reproductive decisions at all. Elisha (1993) reported that many women prefer to make their own decisions regarding contraceptive use without consulting their partners, for instance, women used contraceptives covertly as strategy to subvert male authority. Bloom et al(2001); Jejeebhoy (2002) define women autonomy as their ability to influence decisions about themselves or close household members, their ability to control economic resources and information, and their ability to move freely. Several studies have found that women with little autonomy in the household are less likely to make innovative decisions (Rutenberg and Watkins, 1997), that is, women's lack of power restricts their ability to make decisions about family planning practice as well as to have an open discussion with their partners about it, consequently, she may feel the need to pick and choose contraceptive methods that are less observable or do not need the consent of her husband (NPopC and ICF Macro, 2009). Also, Bawah et al (1999) found that revealing contraceptive use can also lead to tension with the partner, financial backlash, or a decrease in intimacy, compelling women to covertly use contraception.

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Biddlecom and Fapohunda (1998) observed that about 7% of female respondents said they would use contraceptives with the knowledge of their husbands, an action that may be viewed as challenging the husbands' authority due to female autonomy.In Nigeria, family planning has been regarded with apprehension by some ethnic and religious groups. Not only have such programs been perceived as encouraging "infanticide" and constituting untoward interference in internal family affairs, but the presence of Shar'ia law in theNorthern statesalso decreases the independence and autonomy of women in controlling frequency of pregnancy by means of contraception (Adegbola, 2008).

However, besides men's involvement, improving the status of women, that is, women's socio-economic and domestic decision making position etcetera was underlined in the past few years as one of the key strategies to ensure the sexual and reproductive health of men and women (Cohen and Richards, 1994). Studies in Togo and Mexico documented the positive effect of women's involvement in paid work and financial autonomy particularly in its impact on contraception and fertility (Gage, 1995). The rationale behind these connections is that the financial contribution to the household by women with paid employment is higher, hence enabling them to control resources and household expenditures, as well as their reproduction (Lasee and Becker, 1997). Demographic literature suggests that theweight of gender-based power dynamics in sexual relationship between men and women on reproductive outcomes is becoming increasingly recognized (Mason and Smith, 2000). The empowerment of women as reflected in their socio-economic and employment status, educational levels, household organization, the dynamics of their marital relations and their involvement in domestic decision-making is an important factorin the decline of fertility levels in developing countries (Mai Do and Kunmoto, 2012).

2.7. Approaches to definition or measurement of secret use

The determination of the level of secret use of contraceptives is very difficult because the behavior itself is secret, that is, the level of covert use is difficult to determine since the behavior itself is hidden or concealed and there can be costs associated with reporting it to a survey interviewer or family planning provider (Rutenberg and Watkins, 1997). There have been two types of approaches that have been utilized in previous surveys to measure secret use; it can be estimated by direct approach or indirect approach.

2.7.1. Direct approach

Secret use of contraceptive can be measured directly by asking the respondent if her spouse/ partner knewabout her current use. Women reporting "Yes" were assumed to be using contraception with their partner's knowledge while women reporting "No" or "I don't know" were assumed to be using contraception covertly(Gasca, 2013; Tensou and Hindin, 2010;Biddlecom and Fapoohunda, 1998; Bankole and Singh, 1998; Biruk and Assefa, 2007).

2.7.2.Indirect approach

Survey dataor Focus Group Discussions (FGD)have been noted toindirectly evaluate secret use of contraceptive from discordant responsesbetween husbands and wives about current contraceptiveuse. These were done by using couple data file or separate discussion groups of male and female.Covert contraceptive use by wife is estimated on the basis of use of female contraceptive methods reported by both husband and wife or where the wife affirms use and the husband does not (Gasca, 2013; Tensou and Hindin, 2010; Biddlecom and Fapoohunda, 1998; Bankole and Singh, 1998; Biruk and Assefa , 2007).

2.8. Consequences of secret use of contraceptives

The qualitative evidence from a number of studies shows that women's decision to secretly use contraceptives is not undertaken lightly and can have harsh consequences if their husbands discover their covert uses (Biddlecom and Fapohunda, 1998).

Covert contraceptive use indicates that some women roughly one in every ten contraceptive users not only do not want their husbands to be involved, but also want to keep the use hidden(Barnett, 1999).Since some women do not wish to have their husbands involvedat all in these type of decisions, theymay however face challenges to their right to privacy and confidentialityin adopting or switching methods.

Covert use presents problems with respectto side effects of methods. Biddlecom and Fapohunda (1998) noted that a woman may not seek treatmentor change methods for fear of being discovered, thus prolonging andperhaps intensifying her health problems.

Secret use of contraceptives has drawbacks for a marriage that may or may not outweigh the family planning benefits for women (Belohlav and Maheshkarra, 2013).Secret use of contraceptives may also introduce mistrust in the marriage, though it could also improve the welfare of women and their children by, for example, increasing the amount of time between each birth (Belohlav and Maheshkarra, 2013).

As some women may wish to keep their family planning intentions to themselves and prefer covert contraceptive use, this practice prevents these women from accessing services (Caldwell and Caldwell, 1987).

Revealing contraceptive use can also lead to tension with the partner, financial backlash, or a decrease in intimacy (Bawah, et al., 1999).

CHAPTER THREE

METHODOLOGY

3.1 Study setting

The 2008 Nigeria Demographic Health Survey (NDHS) is based on a nationally representative sample of Nigeria that covered all its six geo-political zones. Nigeria lies between latitudes 4□16□ and 13□53□ north and latitude 2□40□ and 14□41□east in the West Africa Sub-region. It shares borders with Niger in the north, Chad in the northeast, Cameroon in the east and Benin in the west. To the south, Nigeria is bordered by approximately 850 kilometers of the Atlantic Ocean, stretching from Badagry in the west to the Rio del Rey in the east (NPopC, 2009a). It is the most populous country in Africa, with a population of more than 170 million people. The country is made up of 36 states and a Federal Capital Territory (FCT), Abuja. For administrative purposes, the states and FCT are grouped into six geo-political zones.There are more than 350 ethnic and linguistic groups. The populations studied in this research are married women aged 15-49 years.

3.2 Sampling method

The sample for the 2008 Nigeria Demographic and Health Survey (NDHS) was designed to provide population and health indicators at the national, zonal and state levels. The sample design gave allowance for specific indicators like; contraceptive use, secret contraceptive use which was calculated for the 6 zones and 37 states (36 states plus the Federal Capital Territory, Abuja) of the federation (NPopC and ICF macro, 2009).

The sampling frame used for the 2008 NDHS was the 2006 Population and Housing Census of the Federal Republic of Nigeria conducted in 2006, and was provided by the National Population Commission (NPC).

During the 2006 population census, each locality was subdivided into convenient areas known as enumeration areas (EAs), in addition to the administrative units of the Federal Republic of Nigeria namely; states, local government areas (LGA), and localities. The primary sampling units (PSU), referred to as a cluster for the 2008 NDHS, is defined on the basis of EAs from the 2006 EA census frame (NPopC and ICF Macro, 2009).

The 2008 NDHS sample were selected using a stratified two stage cluster design consisting of 888 clusters, 286 in the urban and 602 in the rural areas. Representative samples of 36,800 households were selected, with a minimum target of 950 completed interviews per state. In each state, the numbers of households were distributed proportionately among its urban and rural areas. A complete listing of households and a mapping exercise were carried out for each cluster from April to May 2008, with the resulting list of households serving as the sampling frame for the selection of households in the second stage. All private households were listed. The final survey sample included 886 instead of 888 clusters because, during field work, access was not obtained in one cluster due to flooding, and in another due to inter-communal disturbances (NPopC and ICF macro, 2009).

3.3 Study design

The study design employed in this study was a retrospective cross-sectional study.

3.4 Data source

The study used a secondary data set. The data was extracted from the 2008 Nigeria Demographic Health Survey (NDHS) which happens to be the fourth Demographic and Health Survey (DHS) carried out in Nigeria and was conducted by Inner city fund (ICF) Macro Calverton, Maryland, U.S.A. in conjunction with National Population Commission (NPC), Nigeria. The individual female dataset (NGIR52FL.SAV) from the survey was utilized for this study. Basic information were those on background information of woman, reproduction history, marriage and sexual activities, fertility preference, awareness and use of family planning methods, woman empowerment, decision making autonomy, attitudes towards refusing sex with husband, domestic violence, women's work and husband's background characteristics and other health indicators of married women. A multi-stage probability sampling was adopted to select 33,385 women age 15-49years.

3.5 Ethical consideration

Formal approval to use the 2008 Nigeria Demographic Health Survey (NDHS) data was obtained and an authorization to download the dataset from on-line archive was gotten from ORC Macro International, the agency responsible for the worldwide Demographic and Health Surveys.

3.6. Eligibility criteria

Inclusioncriteria: Women of reproductive age 15-49 years who were currently in marriageand werecurrently using a method of contraception at the time of survey were included in the study.

Exclusion criteria: Women who were pregnant, menopausal and not currently using a method of contraceptive at the time of the survey were excluded from the analysis.

3.7 Data analysis

Data analysis was carried out using Statistical Package for Social Science (SPSS, version 16.0) and was based on currently married andcontracepting women of childbearing age (15-49years).The data was weighted to adjust for the stratified two-stage cluster sampling technique adopted during the survey. Frequencytables was used to describe and summarize variables of interest. Cross tabulationswas carried out using chi-squared test to test the significance of association between any two categorical variables and also to investigate associations between the dependent variable (secret use of contraceptives) and independent variable (the selected demographic, socio-economic andfertility behaviouralcharacteristics). Variables that were included for multiple logistic regression modelswere selected based on their statistical significance at the bivariate level. Theparameters were fitted and tested for statistical significance at5%significant level, p=0.05.

3.8 Variables

Variables were selected based on the analytical framework described in chapter 1 of this dissertation.

3.8.1. Independent/ explanatory variable

These are the demographic, socio-economic and fertility behavioural factors highlighted in the analytical framework.

3.8.2. Dependent / outcome variable

Covert/secret contraceptive use.

3.9. MODELING STRATEGY

The modeling strategies involve the use of regression analysis techniques to identify independent factors associated with secret contraceptive use.

1. **Simple regression model and analysis**

   - **Model I**: use of bivariate and multiple logistic regression model to identify and explore each demographic factoras well as to determine the association between each variable and secret contraceptive use.
   - **Model II**: use of bivariate and multiple logistic regression model to identify and explore each socio--economic factor as well as to determine the association between each variable and secret contraceptive use.
   - **Model III**: use of bivariate and multiple logistic regression model to identify and explore each fertility behavioural factor as well as to determine the association between each variable and secret contraceptive use.

2. **Multiple logistic regression analysis:** This is the full model combining the demographic, socio-economic and fertility behavioural factors that were significant at p=0.05 in model I, II, and III. The independent contributions of each variable in the presence of others was ascertained from this model.

CHAPTER FOUR

RESULTS

4.1. Demographic characteristics of respondent

Data on a total of 3439 female respondentsaged between 15-49 years were analysed. The mean age of the women was 33.08 years (SD 7.33). From table 4.1, there was ahigher proportion of respondent between age 25-34years (44.3%)and those whose partners were aged between 35-59 years.More than half of the women (55.5%) reside in urban areas.About 74.5% ofthe women were Christians andmore than half of the respondents were from the Southern region (S/E-14.5%, S/S-22.7% and S/W-40.2%).

4.2. Socio- economic characteristics of respondent

Table 4.2 shows the socio- economic characteristics of the study subjects. It revealed that a large proportion of the women (85%) were in a monogamous union while (14.6%) were in polygamous union. About (45%) of respondents had a secondary education, while (9.2%) had no education and (24.2%) attained a higher education. Majority of the respondents (99.9%) reported to be involved in making decisions on own health. Respondents that were currently working were about 82.3%. Only 5.5% of the respondents had experienced a form of sexual violence while 3.5% of the respondent had experienced a form of physical violence from their partners.

4.3. Fertility behavioural characteristics of respondents

Table 4.3 shows that in terms of desire for more children, about (38%) of the women wanted no more children while (55%) desired to have more. More than half of the respondents (67.3%) had between 1to 4 children while (30.5%) had more than 4 children. The current

contraceptive method mostly used by respondents were injections (17.6%) closely followed by male condoms (16.7%), periodic abstinence (14.3%), withdrawal (13.5%), Pills (11.5%), lactational amenorrhea (10.7%) and other methods (15.8%). Close to half of the respondents obtained their contraceptives from other sources other than private or government health facilities.

A large proportion of the women (80.3%) reported that they were able to refuse sex when not wanted and more than half of the respondents have also been exposed to family planning messages on media (radio/ television/newspaper).

Table 4.1. **Frequency distribution of respondents according to their demographic characteristics**

n=3439

Variables	Frequency (%)
Age	
15-24	426 (12.4)
25-34	1522 (44.3)
35-49	1491 (43.3)
Partners' age	
<30	301 (8.9)
30-34	477 (14.1)
35-50	2058 (60.7)
>50	552 (16.3)
Ethnicity	
Hausa	144 (4.2)
Igbo	756 (22.1)
Yoruba	1205 (35.2)
Others	1318 (38.5)
Religion	
Christianity	2549(74.5)
Islam	834 (24.4)
Traditionalist	39 (1.1)
Place of residence	
Urban	1908 (55.5)
Rural	1531 (44.5)
Region/Zone	
North central	433(12.6)
North east	145(4.2)
North west	198(5.8)
South east	500(14.5)
South south	781(22.7)
South west	1382(40.2)

Mean age for women (15-49 years) =33.08 (SD 7.33)
Mean age for partners (15-60+ years)= 41.71 (SD 9.82)

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Mean age for partners (15-60+ years)= 41.71 (SD 9.82)

Table 4.3 **Frequency distribution of respondent according to their fertility behaviouralcharacteristics**

n=3439

Variables	Frequency (%)
Parity	
0	79 (2.3)
1-4	2312(67.3)
>4	1047(30.5)
Desire for more children	
Wants more	1812(55.0)
Undecided	227(6.9)
No more	1257(38.1)
Partners' desire for more children	
Wants same	1755(52.9)
Wants more	593(17.9)
Wants less	213(6.4)
Don't know	757 (22.8)
Current contraceptive method use	
Pills	395(11.5)
IUD	231(6.7)
Injections	604(17.6)
Male condom	575(16.7)
Female sterilization	91(2.7)
Periodic abstinence	491(14.3)
Withdrawal	463(13.5)
Others[a]	221(6.4)
Lactational amenorrhea	368(10.7)
Decision maker for contraceptive use	
Mainly respondent	588 (18.4)
Mainly partner	571 (17.9)
Joint decision	2021 (63.2)
Others [b]	17 (0.5)
Source where contraceptive is obtained	
Government	670(19.5)
Private	1084(31.5)
Others[c]	1685(49.1)
Respondents able to refuse sex	
No	655(9.7)
Yes	2664(80.3)
Respondent justifies wife beating if she refuse sex	
No	2859(83.5)
Yes	513(15.0)
Don't know	54 (1.6)
Exposure to family planning messages (radio/ television/ newspaper)	
No	1201(35.0)
Yes	2233(65.0)

Other [a]includesNorplant, female condom, foam or jelly andother unspecified methods of contraceptive

Other[b] includesNGO, mission and other unspecified health facilities.

Other[c]includesother relatives and friends of respondent

4.4 Covert contraceptive use and pattern

Overall, 595 (17.3%) of 3439 women were involved in secret use of contraceptives.

The method and pattern of contraception that were mostly used secretly by respondents were injectables (26.6%), lactation amenorrhea (21.8%), periodic abstinence (17.5%), pills (14.7%) and other methods not specified (15.8%).

Table 4.4 Pattern/ Methods mostly used secretly by currently married women of reproductive age in Nigeria, (NDHS 2008)

Methods	n (%)
Pills	88(14.7)
IUD	31(5.1)
Injections	158(26.6)
Periodic abstinence	104(17.5)
Others[a]	65 (15.8)
Lactational amenorrhea	130(21.8)

Others[a] includes Norplant, female condom, Diaphragm, foam or jelly and other unspecifiedmethods of contraceptive

4.5 Bivariate analysisofcovert contraceptive use and selecteddemographic characteristics of respondents

Table 4.5 shows the association between secret contraceptive use and respondents demographic characteristics. It was observed that there was no statistical association between respondents' age and secret contraceptive use (p=0.737), however there was an association between partners age and secret contraceptive use (p=0.003) asproportions of respondents whose partners were >50 years had a higher odds to covertly use a method of contraception (22.1%). The practice of secret contraceptive use varies across the ethnic groups (p<0.001), itwas more prevalent among the Hausas (32.6%) and lesser among the Igbos (12.2%). In addition, secret contraceptive use was more common among rural dwellers (19.6%) compared to their urban counterparts (15.5%, p=0.001).

4.6 Bivariate analysisof secret contraceptive use and socio-economic characteristics of respondents

From table 4.6 below, the prevalence of secret contraceptive use was highest among respondents who had no education (27.5%) compared to those who had primary (18.6%), secondary (18.8%) and higher education (10.7%).With respect to wealth status of respondents, secret contraceptive use was more prevalent among the poor (25.5%) followed by those who were in the middle class (21.7%) and least among the richest (15.0%). Women who were in a polygamous union had a higher prevalence (24.1%) of secret use of a method of contraceptive compared to those in a monogamous union (15.5%). It was observed that a higher proportion of respondents who had either experienced a kind of physical violence (25.3%) or sexual violence (26.1%) reported use of a method of contraceptive secretly and this was significant (p=0.022 and p=0.001 respectively).

4.7 Bivariate analysisof secret contraceptive use and fertility behaviour/ intentions of respondents

From table 4.7, respondents who had 5 children and above (19.5%) had a higher prevalence of secret contraceptive use as compared to those who had between 1-4 children (16.5%) and no children (12.7%). However, women whose partners had a desire for more children recorded a higher proportion of those secretly using a method of contraceptives (28.3%) as compared to those whose partners wanted same number of children (10.8%) or wanted less (15%).

Secret contraceptive use was common among respondents who reported that they do not have the ability to refuse sex when not wanted (24.4%) compared to those who could (15.3%).

Table 4.5: Cross tabulation of Secret Contraceptive Use and demographic characteristics of Respondents

Variables	Secret contraceptive use		Chi- square	p-value
	No (%)	Yes(%)		
Respondents' age				
15-24	354 (83.1)	72 (16.9)	0.611	0.737
25-34	1265 (83.1)	257 (18.9)		
25-34	1224 (82.1)	267 (17.9)		
Partners' age				
<30	251 (83.4)	50 (16.6)	13.608	0.003**
30-34	410 (86.0)	67 (14.0)		
35-50	1719 (83.6)	338 (16.4)		
>50	430 (77.9)	122 (221)		
Ethnicity				
Hausa	97 (67.4)	47 (32.6)	52.704	<0.001**
Igbo	664 (87.8)	92 (12.2)		
Yoruba	1025 (85.0)	118 (15.0)		
Others	1045 (79.30)	273 (20.7)		
Religion				
Christianity	2157 (84.6)	392 (15.4)	25.628	<0.001**
Islam	644 (77.1)	191 (22.9)		
Traditionalist	30 (76.3)	9 (23.1)		
Place of residence				
Urban	1613 (84.5)	295 (15.5)	10.145	0.001**
Rural	1231 (80.4)	300 (19.6)		
Region/Zone				
North Central	344 (79.4)	89 (20.6)	89.270	<0.001
North East	108 (74.5)	37 (25.5)		
North West	122 (61.6)	76 (38.4)		
South East	435 (87.2)	64 (12.8)		
South South	644 (82.5)	137 (17.5)		
South West	1190 (86.0)	193 (14.0)		

**** implies p≤0.05 (statistically significant)**

Table 4.6 **Cross tabulation of Secret Contraceptive Use and selected socio-economic characteristics of respondents**

Variables	Secret contraceptive use		Chi- square	p-value
	No (%)	Yes (%)		
Respondents' educational level				
No education	288 (72.5)	109 (27.5)	49.279	<0.001**
Primary	719 (81.4)	164 (18.6)		
Secondary	1283 (83.4)	255 (18.8)		
Higher	553 (89.3)	66 (10.7)		
Partners' educational level				
No educational	212 (68.2)	99 (31.8)	53.690	<0.001**
Primary	699 (83.2)	141 (16.8)		
Secondary	1204 (84.6)	220 (15.4)		
Higher	701 (85.3)	121 (14.7)		
Wealth index				
Poor	327 (7405)	112 (25.5)	36.611	<0.001**
Middle	386 (78.3)	107 (21.7)		
Rich	2131 (85.0)	376 (15.0)		
Decision making ability on own health				
Respondent involved	470 (79.9)	118 (20.1)	12.382	0.006**
Not involved	912 (81.1)	213 (18.9)		
Type of Union				
Monogamy	2397 (84.5)	440 (15.5)	21.815	0.001**
Polygamy	369 (75.9)	117 (24.1)		
Work status				
Currently working	2328 (82.8)	484 (17.2)	0.088	0.767
Not working	497 (82.3)	107 (17.7)		
Respondent's experience of physical violence				
No	2281 (83.5)	451 (16.5)	5.223	0.022**
Yes	74 (74.7)	25 (25.3)		
Respondents' experience of sexual violence				
No	2239 (83.7)	435 (16.3)	10.230	0.001**
Yes	116 (73.9)	41 (26.1)		

** implies p≤0.05 (statistically significant)

Table 4.7 Cross tabulation between secret contraceptive use and fertility behavioral characteristics of respondent

Variables	Secret contraceptive use		Chi- square	p-value
	No (%)	Yes (%)		
Parity				
0	69 (87.5)	10 (12.7)	5.789	0.054
1-4	1932 (83.5)	381 (16.5)		
>4	843 (80.5)	204 (19.5)		
Respondent desire for more children				
Wants More	1491 (82.3)	321 (17.7)	4.160	0.245
Undecided	187 (82.4)	40 (17.6)		
Wants no more	1056 (84.0)	201 (16.0)		
Partner's desire for more children				
Wants same	1567 (89.2)	189 (10.8)	130.6	<0.001**
Wants more	425(71.1)	168 (28.3)		
Wants less	181 (85.0)	32 (15.0)		
Don't know	572 (75.6)	185 (24.4)		
Decision maker for contraceptive use				
Mainly respondent	338 (57.6)	249 (42.4)	619.7	<0.001**
Mainly partner	532 (93.2)	38 (6.7)		
Joint decision	1922 (95.1)	99 (4.9)		
Others*	11 (64.7)	6 (35.3)		
Respondent able to refuse sex				
No	495 (75.6)	160 (24.4)	30.774	<0.001**
Yes	2256 (84.7)	407 (15.3)		
Respondent justifies wife beating if she refuse sex				
No	2392 (83.7)	467 (16.3)	17.473	<0.001**
Yes	393 (76.6)	120 (23.4)		
Don't know	48 (90.6)	5 (9.4)		
Exposure to family planning Message (Radio, TV, Newspaper)				
No	839 (798.8)	226 (21.2)	17.290	<0.001**
Yes	2001 (84.6)	365 (15.4)		

Others* refers to relatives and friends and other unspecified persons

** implies $p \leq 0.05$ (statistically significant)

4.8. Effects of selected demographic factors associated with secret use of contraceptives among currently married women in Nigeria

Results from table 4.8 (model 1) shows thebivariate and multiple logistic regression analysis of demographic factors associated with secret contraceptive use.Respondents whose partners were more than 50 years were more likely to practice secret contraceptive use compared to those whose partners age were less than 30 years (OR=1.49, CI=0.93-2.42). The odds of secret useof a method of contraceptive was about 1.5 times higher among Muslim respondents compared to those who were Christians (OR= 1.49, CI=1.17-1.92).Respondents from the North Western region were 2.26 times as likely to use a method secretly compared to those from North Central region (OR=2.26, CI=1.47-3.48). Respondents' age was however not found to be significantly associated with secret use of contraceptives.

4.9 . Effects of selected socio-economic factors associated with secret use of contraceptives among currently married women in Nigeria

Results from model II (Table 4.9), revealed that respondents who attained a higher education were about 69% less likely to secretly use a method of contraceptive than those who had no education (OR=0.31 CI=0.18-0.52). Also, those who were in a polygamous union were 1.6 times more likely to use a method secretly compared to those in a monogamous union (OR=1.64, CI=1.23-2-18). Furthermore, the odds of secret contraceptive use was found to be about 2 times higher among women who had experienced a form of sexual violence than those who had not (OR=2.14, CI=1.14-3.99).

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4.10. Effects of fertility behavioral factors associated with secret use of contraceptives among currently married women in Nigeria

Table 4.10 below (model III) shows that with respect to decision maker on contraceptive use, women whose partners were the decision makers for contraceptive use had a lower odd to use a contraceptive method secretly (OR= 0.09, CI=0.06-0.14) compared to those respondents who were the main decision maker.

The odds of secret use of contraceptive was 2.5 times higher among respondents whose partners wanted more children compared to those whose partners wanted same number of children (OR=2.50, CI=1.82-3.46).

Table 4.8 Model I: Univariate and Multiple logistic regression analysis showing demographic factors associated with secret use of contraceptives in Nigeria, NDHS 2008.

Factors	Univariate model β	p-value	Unadjusted OR (95% CI)	Multivariate model β	p-value	Adjusted OR (95% CI)
Respondents' age						
15 – 24 (ref)			1.00			1.00
25 34	0.005	0.973	1.00 (0.75-1.34)	0.156	0.397	1.17 (0.81 -1.68)
35 – 49	0.079	0.610	1.07 (0.81 – 1.44)	0.073	0.720	1.07 (0.72 -1.61)
Partners' age						
<30 ref)			1.00			1.00
30 – 34	-0.190	0.351	0.83 (0.56-1.23)	-0.185	0.410	0.83 (0.54 -1.29)
35 -50	-0.006	0.969	0.99 (0.72-1.38)	0.003	0.990	1.00 (0.66 -1.52)
>50	0.364	0.051	1.42 (0.99-2.07)	0.404	0.097	1.49 (0.93 -2.42)
Religion						
Christianity (ref)			1.00			1.00
Islam	0.489	<0.001	1.63(1.34-1.98)**	0.405	0.002	1.49 (1.17-1.93)**
Traditionalist	0.496	0.197	1.64 (0.77-3.49)	0.281	0.480	1.32 (0.61-2.88)
Ethnicity						
Hausa (ref)			1.00			1.00
Igbo	-1.265	<0.001	0.28(0.18-0.43)**	-0.224	0.478	0.79 (0.43- 1.49)
Yoruba	-1.018	<0.001	0.36(0.25-0.53)**	-0.006	0.982	0.99 (0.58- 1.72)
Others	-0.626	0.001	0.54(0.37-0.78)**	0.230	0.364	1.26 (0.77- 2.07)
Place of residence						
Urban (ref)			1.00			1.00
Rural	2.888	0.001	1.33(1.17-1.59)**	0.134	0.183	1.14 (0.94-1.39)
Region /Zone						
North central (ref)			1.00			1.00
North east	0.288	0.200	1.33 (0.86-2.07)	0.151	0.531	1.16 (0.73-1.86)
North west	0.876	<0.001	2.40(1.66-3.47)**	0.947	<0.001	2.58 (1.66-4.01)**
South east	-0.559	0.002	0.57(0.40-0.81)**	-0.021	0.934	0.98 (0.59-1.62)
South south	-0.189	0.213	0.83(0.62-1.11)	-0.063	0.702	0.94 (0.68-1.29)
South west	-0.465	0.001	0.63(0.48-0.83)**	-0.235	0.189	0.79 (0.56-1.12)

****implies p≤ 0.05 (statistically significant)**
ref = reference category

Table 4.9 Model 11: Univariate and Multiple logistic regression analysis showing demographic factors associated with secret use of contraceptives in Nigeria, NDHS 2008

Factors	Univariate model β	p-value	Unadjusted OR (95% CI)	Multivariate model β	p-value	Adjusted OR (95% CI)
Respondents educational level						
No Education (ref)			1.00			1.00
Primary	-0.507	<0.001	0.60 (0.46-0.79)**	-0.271	0.173	0.76(0.52-1.13)
Secondary	-0.644	<0.001	0.53 (0.41-0.68)**	-2.262	0.196	0.77 (0.52-1.15)
Higher	-1.151	<0.001	0.32 (0.23-0.44)**	-1.185	<0.001	0.31 (0.18-0.52)**
Partner's education level						
No education (ref)			1.00			1.00
Primary	-0.841	<0.001	0.43 (0.32-0.58)**	-0.449	0.035	0.64 (0.42-0.97)**
Secondary	-0.938	<0.001	0.39 (0.29-0.52)**	-0.311	0.146	0.73 (0.48-1.11)
Higher	-0.999	<0.001	0.36 (0.27-0.50)**	-0.133	0.583	0.88 (0.54-1.41)
Wealth index						
Poor (ref)			1.00			1.00
Middle	-0.215	0.614	0.81 (0.59-1.09)	-0.016	0.932	0.98 (0.68-1.43)
Rich	-0.668	<0.001	0.51 (0.40-0.65)**	-0.133	0.032	0.70 (0.50-0.98)**
Decision making ability on own health						
Resp. involved (ref)			1.00			
Resp. not involved	-1.570	0.300	0.21 (0.11-4.05)			
Type of union						
Monogamy (ref)			1.00			1.00
Polygamy	0.545	<0.001	1.72 (1.37-2.17)**	0.493	0.001	1.64 (1.23-2.18)**
Work status						
Currently working (ref)			1.00			1.00
Not working	0.033	0.781	0.78 (0.77-4.22)	0.063	0.657	1.07 (0.80-1.40)
Experience of physical violence						
No (ref)			1.00			1.00
Yes	0.510	0.032	1.67 (1.04-2.65)**	-0.238	0.551	0.79 (0.36-1.73)
Experience of sexual violence						
No (ref)			1.00			1.00
Yes	0.596	0.002	1.82 (1.25-2.63)**	0.761	0.017	2.14 (1.14-3.99)**

** implies p≤0.05 (statistically significant)
ref= reference category

Table 4.10. Model III: Univariate and Multiple logistic regression analysis showing fertility behavioral factors associated with secret use of contraceptives in Nigeria, NDHS 2008

Factors	Univariate model β	p-value	Unadjusted OR (95% CI)	Multivariate model β	p-value	Adjusted OR (95% CI)
Parity						
0(ref)			1.00			1.00
1-4	0.311	0367	1.36(0.69-2.67)	0.650	0.236	1.92(0.65-5.62)
>4	0.516	0.139	1.68(0.85-3.32)	0.682	0.228	1.98 (0.65-6.01)
Respondent desire for more children						
Wants more (ref)			1.00			1.00
No more	-0.124	0.208	0.88 (0.73-1.07)	-0.149	0.359	0.86 (0.63-1.18)
Undecided	-0.008	0.964	0.99(0.69-1.43)	-0.721	0.006	0.49(0.29-0.87)**
Partners' desire for more children						
Wants same (ref)			1.00			1.00
Wants more	1.185	<0.001	3.27 (2.58-4.13)**	0.927	<0.001	2.52 (1.83-3.49)**
Wants less	0.386	0.061	1.47 (0.98-2.20)	0.378	0.197	1.46 (0.82-2.59)
Don't know	0.987	<0.001	2.68 (2.14-3.35)**	0.674	<0.001	1.96 (1.42-2.71)**
Respondent able to refuse sex						
No (ref)			1.00			1.00
Yes	-0.579	<0.001	0.55 (0.45-0.69)**	-0.153	0.351	0.86 (0.62-1.18)
Decision maker for contraceptive use						
Mainly respondent (ref)			1.00			1.00
Mainly partner	-2.329	<0.001	0.97(0.068-0.14)**	-2.386	<0.001	0.09 (0.06-014)**
Joint decision	-2.659	<0.001	0.07 (0.054-0.09)**	-2.650	<0.001	0.07 (0.05-0.09)**
Respondent justifies wife beating if she refuse sex						
No (ref)			1.00			1.00
Yes	0.442	<0.001	1.56 (1.24-1.95)**	-0.150	0.434	0.86 (0.59-1.25)
Undecided	-0.574	0.212	0.56 (0.23-1.39)	-1.170	0.157	0.31 (0.06-1.57)
Exposure to family planning message via radio, TV, Newspaper						
No (ref)			1.00			1.00
Yes	-0.391	<0.001	0.68 (0.56-0.81)**	-0.061	0.663	0.94 (0.71-1.24)

** implies p≤0.05 (statistically significant)
ref = reference category

4.11. Predictors of secret contraceptive use

Model IV (full model) includes all the variables that were significantly associated with secret use of a method of contraceptive from model I, II and III respectively.It was observed that region was the only demographic predictors of secret use of contraceptive. Respondents' education and experience of a form of sexual violence were socio-economic factors that influencesecret use of contraceptives. Partners' desire for more children, respondents' desire for more children as well as decision maker for contraceptive use were the fertility behaviouralfactors that determined secret use of contraceptives.

The results in table 4.11 showed thatrespondents who had a higher education (OR=0.44, CI=0.18-0.89),those who were undecided about having more children (OR=0.39, CI=0.21-0.72) andpartners that were mainly involved in decision making for contraceptive use (OR=0.09, CI=0.05-0.14) were less likely to practice secret contraceptive use.Respondents experienceof sexual violence(OR=2.04, CI=1.22-3.39) and husbands who wanted more children than their wives (OR=2.18, CI=1.47- 3.24)were significant risk factors for secret use of contraceptives.

Table 4.11 Model IV: Results of multiple logistic regression model for predictors of convert use of contraceptives in Nigeria, NDHS 2008.

Factors	β	p- value	OR (95%CI)
Religion			
Christianity (ref)			1.00
Islam	0.239	0.240	1.27 (0.85-1.89)
Traditionalist	0.247	0.677	1.28 (0.40-4.09)
Region/Zone			
North Central (ref)			1.00
North east	-1.748	<0.001	0.17 (0.07-0.43)**
North west	-0.918	0.037	0.40 (0.17-0-95)**
South east	-0.328	0.301	0.72 (0.39-1.34)
South south	-0.628	0.027	0.53 (0.31-0.93)**
South west	0.703	0.007	0.49 (0.29-0.82)**
Respondents educational level			
No education (ref)			1.00
Primary	-0.184	0.541	0.83 (0.461-1.50)
Secondary	0.152	0.626	1.16 (0.63-2.14)
Higher	-0.914	0.026	0.40 (0.18-0.89)**
Partner'seducational level			
No education (ref)			1.00
Primary	-0.470	0.134	0.63 (0.34-1.16)
Secondary	-0.243	0.443	0.79 (0.42-1.46)
Higher	0.006	0.987	1.01 (0.50-2.01)
Type of Union			
Monogamy (ref)			1.00
Polygamy	0.364	0.073	1.44 (0.97-2.14)
Wealth index			
Poor (ref)			1.00
Middle	-0.207	0.468	0.81 (0.47-1.42)
Rich	-0.055	0.827	0.95 (0.58-1.55)
Experience of sexual violence			
No (ref)			1.00
Yes	0.711	0.006	2.04 (1.22-3.39)**

Respondent desire for more children			
Wants more (ref)			1.00
No more	0.000	0.996	0.99 (0.27-1.38)
Undecided	-0.938	0.002	0.39 (0.21-0.72)**
Partners' desire for more children			
Wants same (ref)			1.00
Wants more	0.769	<0.001	2.16 (1.46-3.19)**
Want less	0.072	0.839	1.08 (0.54-2.16)
Don't know	0.517	0.006	1.68 (1.16-2.42)**
Decision maker for contraceptive use			
Mainly respondent (ref)			1.00
Mainly partner	-2.465	<0.001	0.08 (0.05-0.14)**
Joint decision	-2.795	<0.001	0.06 (0.04-0.09)**

** **implies $p \leq 0.05$ (statistically significant)**
ref = reference category

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1. Discussion

This study examined covert contraceptive use among currently married contracepting women of reproductive age (15-49 years) in Nigeria using data from Nigeria Demographic Health Survey, 2008. It specifically estimated the prevalence, patterns or methods mostly used and explored the demographic, socio-economic and fertility behavioural factors associated with the use of contraceptives covertly.

5.1.1 Covert contraceptive use

The 17.3% prevalence of covert contraceptive use observed amongst the women was similar to previous studies that have attempted to measure it directly. A Ugandan studyshowed that 15% of women were using contraceptives without their partners' knowledge(Blanc et al., 1996). The findings from a rural Kenyan setting also show that 20% of contraceptive users admitted to using a method without their husbands' knowledge (Rutenberg and Watkins, 1997; Watkins et al., 1997). However, this prevalence is higher than results reported among Ethiopian and Zambian couples-7.8% and 7% respectively (Tensou and Hindin, 2010; Biddlecom and Fapohunda, 1998). Furthermore, the prevalence was also higher than those observed in some selected nine countries in Sub-Saharan Africa (Burkina Faso, Ethiopia, Madagascar, Malawi, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe)where covert contraceptive use ranged from 3% in Rwanda to 10% in Burkina Faso (Gasca, 2013). Thus, these results agrees with earlier studies by Biddlecom and Fapohunda (1998) which found that the extent to which women secretly practice contraception is estimated to be between 6% and 20% in Sub-Saharan Africa.

5.1.2 Method of contraceptives mostly used

A study in Adama town (Ethiopia) found that injectables followed by pills were the most widely used secret contraceptive methods (Tensou, Hailemariam and Reniers, 2008). Injectables was also noted as the most popular secret method followed by pills for covert contraceptive users throughout the nine Sub- Saharan countries (Burkina Faso, Ethiopia, Madagascar, Malawi, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe) studied by Gasca (2013). There was a slight difference in Zambia where Biddlecom and Fapohunda (1998) found that natural methods, the pills and injectables were the most common method used secretly. Interestingly, the findings in this study conform closely with earlier studies where injectables, lactational amenorrhea and the pills were the most commonly used covert methods by participants. A plausible explanation for these preferences could be convenience of use: for example - not being taken on daily basis; comfortable ways of administration coupled with easy accessibility than other methods in health facilities; lower cost as well as a higher likelihood for secrecy (Lucke et al., 2011).

5.1.3 Factors associated with covert contraceptive use

After controlling for all the variables, the multivariate logistic regression model (full model - IV) indicates that region, higher education of respondents, experience of sexual violence, partners desire for more children as well as decision maker for contraceptive use were factors that were significantly associated with covert contraceptives use.

The findings in this study showed that women from the North western and North eastern regionsas well as those from the South southern and South western regions were less likely than those from North central region to practice covert contraceptives. This was in line with what was reported in Uganda, where Blanc and colleagues observed that female covert

contraceptive users were higher in the Northern region than in the Central region. This regional difference may be connected to regional difference in culture, religion as well as acceptance and agreement on contraceptive utilization (Monjok et al., 2010).

With reference to the relationship between education and covert contraceptive use, the results showed that women with higher education were less likely to practice covert contraceptive useas against those with no education. Thus, corroborating Gasca's findings in an earlier study which indicated that higher educated women were less likely to be covert users as compared to women who had none or lesser years of education (Gasca, 2013). This study revealed that unlike women with some formal education, women with no education were more likely to use a method of contraceptive secretly. This does not come as much of a surprise as other researchers have found that the more years of school a woman completes, the more realistic power she has in her relationship; she then has a higher chance of discussing and advocating family planning with her partner (Castro,1995). Moreover, the uneducated or less educated women, who are more likely to want to limit childbearing, may already, have more children than the educated ones. However, this was in contrast to what was reported in Ethiopia and India (Tinsou and Hindin, 2007; Jejeebhoy, 2000)where educated women were more likely to hide their contraceptive use than the uneducated ones and that where husbands are highly educated, women hiding is less. Interestingly, findings from this study revealed that the husbands' education had no significant relationship with covert contraceptive use.

Markedly, the odds of secretly using a contraceptive method was 2 times higher among women whose husband wanted more children compared to those whose partners wanted same number of children. This was similar to findings by Tensou et al (2010) who reported in a

study in Adama town- Ethiopia that those women who perceive that their husband needs more number of children were almost two times more likely to use contraceptive with a partial or complete ignorance of their husband.This finding echoes the majority of previous studies exploring covert contraception use. A probable explanation for this as observed by researchers is that, women are more concerned with their family size than men and that women wants fewer children than do their husbands due to health and time costs associated with frequent childbearing. Interestingly, Biddlecom and Fapohunda (1998) in a Zambian study found that husbands' desire for more children had no significant effect on secret or open use. This study also revealed that those women who do not know of their husbands' views or opinion on desire for more children were also more likely to practice secret contraception.

With regard to decision making on the use of contraceptives, it was observed that women whose partner were the main decision maker or jointly decide on contraceptive use where less likely to practice covert use compared to their counterparts who were the main decision maker. The reason for this (partner's involvement in decision making for use of contraceptive) may partly be due to the effect of husband reproductive health decision making power that could overwhelm the effect of women household decision making power on couples contraceptive use as suggested by Haile and Enqueselasie (2006). Besides, in Nigeria, most ethnic groups have strong patriarchal systems that confer on men decision-making roles in matters affecting the family and the society. In Nigeria, it has been observed that men place a high premium on children, which has had a profound influence on fertility outcomes (Isiugo-Abanihe, 1994). This outcome may also be likened to woman's education, where women who attained a level of education had a strong positive effect on their current use of a method of contraceptive (Khan and Khan, 2007)

In addition, the result of this study show that experience of sexual violence was an important variable that was strongly associated with the practice of covert contraceptive as those women who had experienced sexual violence were significantly more likely to covertly use a method of contraception than those who had not. This finding was consistent with studies conducted by Alio et al. (2009); Okenwa et al. (2011) who reported that women who experienced intimate partner violence (sexual and physical) exhibited a greater likelihood of using contraceptives secretly than others who did not. Likewise, a study from New Zealand demonstrated that sexually abused women were more likely to use contraception than non-abused women (Fanslow et al., 2008).They argued that sexual violence may be the form of intimate partner violence with the greatest potential to impacta woman's desire to use contraception,in that each act of violence hasthe potential to result in unplannedpregnancy and infections including HIV/STIs.

Thus, a possible reason why these women may have higher covert contraceptive use than their other counterparts may be attributed to their desire to avert pregnancy under unfavourable conditions since it was observed that they are women with high parity, whose partners desires more children than them and also had experienced sexual violence.

5.2 Limitations

This study has some limitations. In view of the fact that there is no survey data available for covert contraceptive use in Nigeria except for the 2008 NDHS which asked married respondents if their husband/partner is aware of their contraceptive use. Consequently, this study was not able to explore the trends of covert contraceptive in Nigeria by using NDHS 2013.

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Secondly, this study examined covert contraceptive use and pattern only among married women; the sample is limited to only currently married contracepting women at the time of the NDHS survey, therefore it does not include not currently married, hence these results may not be generalized to all women in Nigeria.

Furthermore, as a limitation of cross-sectional studies, it was not possible to demonstrate a causal relationship; rather they provide an indication of the associations between fundamental factors and covert contraceptive use. In addition responses to the question on covert contraceptive use were self-reported and the validity of the respondents' claims could not be ascertained.

5.2.1 Strengths

Despite the limitations, this study has some strengths and it is unique in its kind as it includes broader range of factors and focused on the entire country. It also reflects the actual experience of currently married contracepting women during the study period. There are few studies that have examined the method use and predictors of covert contraceptive in Nigeria. hence findings from this study adds to a growing body of literature. However, thestudy signals important directions for future policy, research and practice.

5.3 Conclusion

This study shows the prevalence, pattern and method use as well as the factors associated with covert contraceptive use among currently married women of reproductive age in Nigeria. It revealed that the rate of covert use among these women is high at 17.3% and this practice was more noticeable among those who had 5 or more living children. Region, education of respondents, experience of sexual violence, partners' desire for more children as well as decision maker for contraceptive use were the respective demographic, socio-

economic and fertility behavioural factors that significantly influenced covert contraceptive use. Socio-economic factor and fertility behavioral factor such as respondent experience of sexual violence and partners' desire for more children were the most significant contributory factors influencing the use of contraceptive covertly. These highlight the need for concerned stakeholders to focus on couples and also to encourage male cooperation and involvement in reproductive health decision making as a strategy to enhance family planning use.

5.4. Recommendations

Results of this study therefore stress the need for concerned stakeholders in implementing family planning programs and campaigns that involves men as agents of positive and productive change. This is necessary because ample research have shown that men are important decision makers on reproductive health matters. Hence, male involvement and cooperation in reproductive health issues will increase men understanding and thus enhance their encouragement and support for the women's use of contraceptive.

Also, since women are particularly vulnerable to sexual violence, preventive efforts should be specifically crafted to curb violence against women as well as reduce the longitudinal impact of sexual violence among couples.

The highly significant role of education on covert contraceptive use in this study draws attention to policies directed towards improving family planning method use on the need to consider raising the levels of formal education and promoting basic education, especially among females.

Additionally, the identification of regional differentials in covert contraceptive use has policy implications for service delivery and demographic planning in the different regions. Thus, covert users should be considered when the design and provision of family planning programs are planned.

However, the question remains as to why these women are motivated to use contraceptives without their husband's knowledge.A qualitative research is therefore recommended to identify thereasons for this. Also, more effort should be made to obtain detailed information on the context and experiences of women involved in covert use of contraceptives in Nigeria.

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Appendix:

Description and definition of variables

(a)Demographic factors:

Variables	Description	Variable name in data set	Codes and Categories
Age of respondent	This is the age at last birthday of respondent 5-year groups before the survey	V013	0=15-24yrs 1= 25-34yrs 2=35-49 yrs
Age of partner	This is the age at last birthday of respondent's partner before the survey	V730	0= <30yrs 1= 30-34yrs 2=35-50 yrs 3= >50
Religion	Religion of respondent	V130	0=Christian 1=Muslim 2= traditional
Place of residence	Place of residence of respondent	V102	0=urban 1=rural
Region /zone of residence	Region of residence of respondent	V101	0=North East, 1=North West, 2=North Central, 3=South East, 4=South West, 5=South South.
Ethnicity	This tells which of the ethnic group respondent come from	V131	0=Hausa 1=Yoruba 2=Ibo 3= others

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(b) Socio- economic factors:

Variables	Description	Variable name in data set	Codes and Categories
Respondent educational level	Describes the highest education attained by respondent	V106	0= No education 1=primary 2=secondary 3=higher
Partners educational level	Describes the highest education attained by respondent's partner	V701	0= No education 1=primary 2=secondary 3=higher
Respondent currently working	Describes the work status of respondent	V714	0=No 1=Yes
Decision making ability	ability of respondent to make decision on own contraceptive use	V632	0=respondent only 1=husband only 2=joint decision 3= others
Wealth index	Wealth status of respondent	V190	0= poor 1=middle 2=rich
Physical violence	Respondent experience of violence	D105H	0=No 1=Yes
Sexual violence	Respondent experience of sexual violence	D108	0=No 1=Yes
Women autonomy	Ability of respondent to make decisions on own health and money spending	V743A	0=respondent involved 1=respondent not involved
Type of marriage	This describes the type of union respondent is into.	V505	0=monogamous 1= polygamous

(c) Fertility behavior/ Intentions

Variables	Description	Variable name in data set	Codes and Categories
Number of living children	Respondents children still alive	V218	0=0 1=1-4 2= >4
Desire for more children	Respondent desire for more children	V605	0= wants more 1=no more 2=undecided
Partner's desire for more children	Partner's desire for more children	V621	0=both wants same 1=husband wants more 2=husband wants fewer 3= don't know
Ability to refuse sex	Respondent's ability to refuse sex	V850	0=No 1=Yes
Source of obtaining contraceptive	The last source visited to obtain the any contraceptive method.	V380	0=government/public sector 1=private sector 2=other sector
Exposure to media	Respondent heard of FP via (television, radio, newspaper)	V384A, V384B, and V384C	0=No 1=Yes

Dependent / outcome variable.

Variables	Description	Variable name in data set	Codes and Categories
Secret contraceptive use	Whether the husband knows that respondent is using contraception.	V634	0=No/ Don't know 1=yes

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