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DETERMINANTS OF MODERN CONTRACEPTIVE USE AMONG LACTATING MOTHERS IN THE AGOTIME-ZIOPE DISTRICT OF THE VOLTA REGION OF GHANA

BY

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DECLARATION

I, **Godwin Keteku** of School of Public Health, University of Ghana, do hereby declare that except for citations and ideas that have been duly acknowledged, this dissertation is an original work produced by me under the supervision of Dr. John Kuumouri Ganle. This work has never been submitted in part or whole to any institution or Board for the award of any degree.

_____ _____

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DEDICATION

I dedicate this work to Almighty God who found me with his infinite blessings throughout my study, to my lovely wife Charity and to all mothers. Finally, this dissertation is dedicated to my parents, brothers and sisters and friends for their prayers and good wishes for me in pursuing my carrier.

ABSTRACT

Background: Evidence suggests that modern contraceptive use among married women in low-income countries, including Ghana, is very low. This notwithstanding, few empirical research has been done to identify the determinants of modern contraceptives use among lactating mothers in Ghana more generally, and in the Agotime-Ziope District of the Volta Region in particular. The purpose of this study was to examine factors determining modern contraceptive usage among lactating mothers in the Agotime-Ziope District of the Volta Region.

Methods: A cross-sectional study was conducted among 160 randomly sampled lactating mothers in the district. Data were collected using structured questionnaires. Descriptive, bivariate and logistic regression analysis techniques were used to analyse and present the data.

Results: Contraceptive awareness among lactating mothers is 99%. Despite this, contraceptive prevalence or use among the study respondents was very low: only 29% were currently using contraceptives. Educational level, place of residence, partners influence, and partner's educational level were significantly associated with modern contraceptive use. Fear of side effects, poor attitudes of healthcare providers and partners being opposed to use of modern contraceptives were also found to discourage modern contraceptive use.

Conclusion: High levels of awareness of contraceptive methods do not necessarily lead to use in this study. It is therefore recommended that the Agotime-Ziope District Health Management team develop and implement educational interventions for lactating mothers that will enable them understand the importance of using modern contraceptive methods. Men should also be educated on the importance of the use of modern contraceptives in order to encourage their partners to use the methods.

TABLE OF CONTENTS

DECLARATION i
ACKNOWLEDGEMENTS iii
DEDICATION iv
ABSTRACT v
TABLE OF CONTENTS vi
LIST OF TABLES ix
LIST OF FIGURES x
LIST OF ACRONYMS xi
DEFINITION OF TERMS xii
CHAPTER ONE 1
INTRODUCTION 1
1.1 Background of study 1
1.2 Problem Statement 2
1.3 Research Questions 4
1.4 Objectives 4
1.5 Justification for the study 5
1.6 Conclusion and outline of the dissertation 5
CHAPTER TWO 6
LITERATURE REVIEW 6
2.0 Introduction 6
2.1 Contraceptives 6
2.2 Categories of contraceptives 7
2.2.1 Types of modern contraceptives 7
2.2.1.1 Pills 7
2.2.1.2 Condoms 8
2.2.1.3 Foam 9
2.2.1.4 Implants 9
2.2.1.5 Diaphragm 9
2.2.1.6 Emergency Contraception 9
2.2.1.7 The injectable 10
2.2.1.8 Intrauterine device 10

2.2.1.9 Female sterilization 11
2.2.1.10 Lactational Amenorrhea 11
2.3 Awareness and knowledge of modern contraceptive use 11
2.4 Prevalence of modern contraceptive use 12
2.5 Factors determining modern contraceptives use 14
2.6 Conceptual framework 16
2.7 Conclusion 18
CHAPTER THREE 19
METHODS 19
3.0 Introduction 19
3.1 Research Design 19
3.2 Study area 19
3.3 Study Population 21
3.4 Sample size determination 21
3.5 Sampling method 22
3.6 Data Collection techniques and tools 23
3.7 Pre-testing of instrument and quality control 23
3.8 Data entry and processing 24
3.9 Data analysis 24
3.9.1 Variables 24
3.9.2 Analysis 24
3.10 Ethical clearance 25
3.11 Conclusion 25
CHAPTER FOUR 26
RESULTS 26
4.0 Introduction 26
4.1 Socio-Demographic Characteristics of Respondents 26
4.2 Awareness and Knowledge of Contraceptives. 28
4.3 Modern Contraceptive Use among Lactating Mothers 31
4.4 Factors determining use of modern contraceptives 34
4.4.1 Socio-demographic factors determining contraceptive use among lactating mothers 35
4.4.2 Other factors determining contraceptive use among lactating mothers 37
4.4.3. Logistic regression of the factors that determining contraceptive use 38

4.5 Conclusion 39
CHAPTER FIVE 40
DISCUSSION 40
5.1 Introduction 40
5.2 Summary of findings 40
5.3 Consistency with previous research 41
5.4 Explanation of findings and implications 43
5.5 Strengths and Limitations 45
5.6 Conclusion 45
CHAPTER SIX 47
CONCLUSION AND RECOMMENDATIONS 47
6.1 Conclusion 47
6.2 Recommendations 47
REFERENCES 50
APPENDICES 53
APPENDIX I: INFORMED CONSENT FORM 53
APPENDIX II: QUESTIONNAIRE 54

LIST OF TABLES

Table 4.1: Socio-demographic characteristics of respondents 27

Table 4.2: Awareness and Knowledge of Modern Contraceptives. 29

Table 4.3: Modern Contraceptive Use among Lactating Mothers 32

Table 4.4: Reasons why lactating mothers do not use modern contraceptives 35

Table 4.5: Bivariate analysis of socio-demographic associated with contraceptive use . 36

Table 4.6: Bivariate analysis of other factors associated with contraceptive use 37

Table 4.7: Logistic regression of the factors determining contraceptive among lactating mothers 38

LIST OF FIGURES

Figure 1: Conceptual framework showing the factors that determine modern contraceptive use among lactating mothers..... 17

LIST OF ACRONYMS

CBR	-	Crude Birth Rate
CHPS	-	Community-Based Health Planning Services
CPR	-	Contraceptive Prevalence Rate
EC	-	Emergency Contraceptives
GDHS	-	Ghana Demographic Health Survey
GSS	-	Ghana Statistical Service
HIV	-	Human Immunodeficiency Virus
IUD	-	Intrauterine Device
LAM	-	Lactational Amenorrhea Method
PRB	-	Population Reference Bureau
UNDP	-	United Nation Development Program
USAID	–	United States Agency for International Development
WHO	-	World Health Organization

DEFINITION OF TERMS

Modern Contraceptive: a modern contraceptive is any device, drug, chemical or method that is used with the intention of preventing conception (USAID, 2010)

Lactation: the act of breastfeeding

Postpartum: the period after delivery or childbirth

Amenorrhea: the absence of menstruation or a period during which a woman is incapable of becoming pregnant because her regular menstrual period has ceased.

CHAPTER ONE

INTRODUCTION

1.1 Background of study

Maternal mortality is an indicator of health globally. It is used to show wide gaps between the rich and poor, rural and urban areas as well as differences both between countries and within them (UNDP, 2012; WHO, 2014). Women in developing countries have a far higher risk of dying from a maternal-related cause during their lifetime compared to women living in developed countries. (WHO, 2015). The World Health Organization in its 2014 report indicated a substantial reduction in maternal mortality figures worldwide but also indicated higher numbers in Africa especially in Sub-Saharan Africa. Whereas 1 in 3700 women lose their lives as a result of childbirth in developed countries, the risk of maternal death in Sub-Saharan Africa stands at 1 in 38 (WHO, 2015). The world Health Organization has noted that high maternal mortality figures in sub-Sahara Africa are partly as a result of poor spacing of pregnancies due to low patronage of modern contraceptives (WHO, 2015). This phenomenon, it noted, has resulted in higher risk pregnancies that in most cases put the lives of both mother and child at risk (WHO, 2015)

The use of modern contraceptives allows people to attain their desired number of children and also enables them determine the spacing of pregnancies (WHO, 2010). In particular, birth control for women who are breastfeeding is important worldwide because of its potential to significantly improve child survival and the health of the lactating mother (Truitt, Fraser, Grimes, Gallo, & Schulz, 2015). In the past few years, the use of contraceptives has therefore seen a significant increase in many parts of the world, especially in Asia and Latin America, from 54% in 1990 to 57.4% in 2014 (WHO, 2015). However, in sub-Saharan Africa, only 19% of married women use a

modern method of contraception, the lowest regional contraceptive prevalence rate in the world (PRB, 2011)

In Ghana, use of any method of contraceptives and of any modern method has, respectively, increased steadily over the last six years from 24% and 17% in 2008 to 27% and 22% in 2014 (GDHS, 2014). These increases are however still below the global and African regional averages. The relatively low modern contraceptive use among women of reproductive age in Ghana clearly suggests the need for continuous research to examine contraceptive use practices among women and the determinants of modern contraceptive use.

1.2 Problem Statement

The use of modern contraceptives by lactating mothers as a family planning method could prevent unwanted pregnancies thereby aiding the breast-feeding mother to achieve her desired spacing target for her children (Trutt et al, 2009). This also goes a long way to significantly improve the health of the lactating mother and her children (Trutt et al, 2009). Yet, recent literature suggests that more than 60% of unplanned pregnancies occur among women who do not use any form of modern contraceptives (USAID, 2010; UNDP, 2012). This phenomenon exposes childbearing women, especially lactating mothers to various health hazards (WHO, 2014). The likelihood of infants dying before their first birthday has been demonstrated to be far greater if the infant was born less than one year after the end of their mothers' last pregnancy than those born after a relatively longer period (WHO, 2014). Similarly, the health of infants born with a longer spacing in-between pregnancies are noted to be better if the mothers waited for 18 to 23 months, after a full term birth before conceiving again (Nyengidiki et al., 2011). In view of the potential high risk associated with postpartum mothers conceiving in the absence

of contraceptive use, the need for contraceptive use immediately after the postpartum period cannot be over emphasised as this period marks the beginning of return of fertility in most women (Nyengidiki et al., 2011).

In Ghana, however, recent data suggest that most women do not meet their desired spacing target for childbirth (Ghana Statistical Service, 2015). For instance, more than 1 in 10 non-first births, corresponding to about 13% of all non-first births, occur less than 24 months after a preceding birth (GSS, 2014). Apart from the Ashanti Region of Ghana, more women in the Volta Region have conceived before their 24th month since last preceding births than in any other region (GSS, 2014). In the specific case of the Agotime-Ziope district, the 2014 Agotime-Ziope District Health report indicates that about 17% of non-first births occur less than two years after a preceding birth. This figure is slightly higher than the Volta Regional average of 16.1% (GSS, 2014). Generally, the Ghana Statistical Service in its 2014 Demographic and Health Survey recorded higher incidences of unplanned pregnancies in lactating mothers.

Among the reasons that have been identified to account for why most Ghanaian women do not meet their desired spacing target for childbirth are the desire for children as well as low modern contraceptive use among women of reproductive age (GSS, 2014). In this regard, several studies have been carried out in developing countries, including Ghana, to examine the determinants of modern contraceptive use among women of reproductive age (see Sharan, Soucat, May, & Ahmed, 2009; UNDP, 2012; Pacqué-margolis, Cox, Puckett, & Schaefer, 2013; Asia, Asia, & Lucia, 2015). These studies have identified various factors, which influence women's use of modern contraceptives. These factors include age, educational level, socioeconomic status, partner's consent, religion, (Obungu, 1994; Sharan, Soucat, May, & Ahmed, 2009; UNDP, 2012; Pacqué-margolis, Cox, Puckett, & Schaefer, 2013; Asia, Asia, & Lucia, 2015). While these studies have

provided useful insights about contraceptive use behaviours and determinants among women of reproductive age, these studies have not examined factors influencing modern contraceptive use in postpartum women. To the author's knowledge, no empirical study has been conducted in the Agotime-Ziope District of the Volta region to examine whether lactating mothers use modern contraceptives and the determinants of modern contraceptive use among lactating mothers. This gap in knowledge could potentially hinder effective planning and delivery of family planning, sexual and reproductive healthcare services to lactating mothers in the district. For this reason, this study set out to fill this knowledge gap by investigating the determinants of modern contraceptive among lactating mothers, focusing on the Agotime-Ziope District of the Volta region.

1.3 Research Questions

1. Do lactating mothers in the Agotime-Ziope District of the Volta Region of Ghana use modern contraceptives?
2. What method of contraceptives do lactating mothers in the Agotime-Zope district of the Volta Region use and what are their reasons for their choice?
3. What factors are associated with the use or otherwise of modern contraceptives among lactating mothers in the Agotime-Ziope District of the Volta Region of Ghana?

1.4 Objectives

The general objective of this study was to examine the determinants of modern contraceptive use among lactating mothers in the Agotime-Ziope District of the Volta Region of Ghana

Specific objectives of the study were to:

1. Determine modern contraceptive usage among lactating mothers in the Agotime-Ziope District of the Volta Region.
2. Describe the modern contraceptive methods lactating mothers used and the underlying reasons.
3. Determine the factors associated with use of modern contraceptives among lactating mothers in the Agotime-Ziope District.

1.5 Justification for the study

The result from this study could help policy makers and healthcare delivery personnel better understand factors, which influence the choice of modern contraceptives in postpartum women so as to improve their family planning activities with an overarching aim of reducing maternal mortality.

1.6 Conclusion and outline of the dissertation

This chapter provided a background to the study, articulated the research problem and set out the research objectives and questions. Review of relevant related literature is presented in the next chapter in order to provide a proper context for the current study. Chapter discusses the research methods. Results are presented in chapter four, while a discussion of the results is conducted in chapter five. Chapter six concludes the dissertation and as well makes recommendation for policy

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews related literature on modern contraceptive use among women in general and lactating women in particular. The review is organised around defining key concepts and synthesizing literature and empirical evidence related to the specific objectives of the study. The review particularly focuses on definition and type of contraceptives, awareness and knowledge of modern contraceptives women, modern contraceptive use, and the determinants of modern contraceptives use.

2.1 Contraceptives

A contraceptive is any device, drug, chemical or method that is used with the intention of preventing conception (USAID, 2010). It is an age-old way of planning one's family (Seltzer, 2002). For instance, contraception has been an ancient mechanism used to control family sizes, and in some bizarre situations as documented by history, it had been used as a means of advancing genetics by controlling the breeding of human kinds that are considered by advocates as weaklings or generally unfit for society (Seltzer, 2002). Contraceptive as a family planning method, allows people to attain their desired number of children and also enables them determine the spacing of pregnancies (WHO, 2015). By preventing ill-timed pregnancies and births, contraceptives help reduce infant mortality rates and also promote the health of the mother (WHO, 2015). Indeed, it became paramount in the 1980s that the public health consequences of high fertility for mothers and children needed to be looked at. High rates of infant, child, and maternal mortality coupled with increasing abortion and its health consequences, were becoming pressing health problems in many developing nations and had also become of greater

concern to international development agencies (Seltzer, 2002). High maternal mortality was associated with high-risk circumstances that family planning could help to address. These included a high number of pregnancies, births to older and younger women, and pregnancies that were unintended, closely spaced births which were associated with higher rates of infant morbidity and mortality (Seltzer, 2002). All these factors brought and continue to bring to the fore the necessity for governments to take centre stage in family planning programmes that could provide poor women with access to family planning services, including modern contraceptives (Seltzer, 2002).

2.2 Categories of contraceptives

Contraceptives are generally put into two major categories: Traditional Contraceptive and Modern Contraceptives (UNDP, 2010). Whiles traditional methods comprise the age-old rhythmic method (periodic abstinence) and withdrawal (coitus interruptus), modern contraceptives comprise female sterilization, male sterilization, pills, depot implants, male condoms, female condoms, intra uterine devices (IUD), Lactational amenorrhea method (LAM) and emergency contraception (WHO, 2008; 2013). For the purposes of this research, the focus of this review will be on modern contraceptives.

2.2.1 Types of modern contraceptives

According to Miller et al. (1998) about 11 broad types of modern contraceptives can be identified. Each of these types is discussed in detail below.

2.2.1.1 Pills

These are drugs taken to alter the fertility cycle of a woman. They work by stopping ovulation and inhibiting the movement of spermatozoa. They include Combined Oral

Contraceptive Pills and Progestin-Only Pills. In breastfeeding women, combined hormonal pills are not recommended prior to 6 weeks postpartum, due to its effects on limiting milk production. However, use after six weeks is encouraged because it effectively protects a woman from the risks of pregnancy. Lactating mothers who are more than six weeks into their postpartum period however still express reservation towards the use of this method of contraception (Jackson, 2011). Pills are highly effective, safe, and reversible. The most recently developed oral contraceptives contain low doses of hormones. The use of pills does not interfere with a couple's intimacy. When a woman wants to have a child, she simply has to stop taking pills to regain her fertility. Its major disadvantage is hormonal imbalance which predisposes the woman to blood clotting (Jackson, 2011).

2.2.1.2 Condoms

The condom is a thin balloon that is worn over the penis (male condom) or inserted into the vagina (female condom) before sex thereby preventing seminal fluids discharged from the penis from contacting an unfertilized egg. Condoms are made of latex or polyurethane. Apart from the condom protecting the women against the risk of pregnancy, condoms have the advantage of protecting her from sexually transmitted diseases. They are largely inexpensive and most common method of contraceptive especially among men. The disadvantages are normally felt in people who are allergic to latex material. There is also an inconvenient of wearing a condom each and every time a couple wants to engage in sexual activity (Miller et al., 1998).

2.2.1.3 Foam

Foams are spermicides that are inserted into the vagina before sex. They prevent pregnancy by killing sperms even before they pass through the cervical canal to the egg (Jackson, 2011). They are readily available and good for couples who are not staying together since the need for constant use of contraceptive is not needed for such people (Miller et al., 1998). Its main disadvantage is the like between frequent use and urinary tract infection.

2.2.1.4 Implants

The contraceptive implant is inserted into the upper arm through an incision to alter a woman's fertility. Advantages attached to the use of the implant method is that it can be removed anytime the woman feels like removing it. It is also a convenient method for lactating mothers after six week of delivery (Miller et al., 1998). However, some women who use this method give reports of irregular menstrual bleeding and in some situations, cessation of menstruation (Miller et al., 1998).

2.2.1.5 Diaphragm

The diaphragm is another barrier method. It is a latex disc a woman places into her vagina before sex. It acts by blocking the man's sperms from entering the cervix. It is also an effective and convenient means of contraceptive (Miller et al., 1998). Its only drawback is that it needs intermittent checks (Miller et al., 1998).

2.2.1.6 Emergency Contraception

This is also called EC, the Morning After Pill, or Plan B, and is taken just after unprotected sex or sex without contraceptive to cause significant hormonal changes that

effectively prevent pregnancy (Miller et al., 1998). The emergency contraceptive pills can prevent pregnancy up to five days (120 hours) after unprotected sex.

They are a simple, effective, convenient form of protection that women can use to minimize the chance of pregnancy when they do not use their regular method or their regular method fails. They offer a woman who has had unprotected sex against her will or unexpectedly a way to avoid a possible. Its efficacy is reduced or nonexistent after 3 days. It therefore does not offer long term protection (Miller et al., 1998).

2.2.1.7 The injectable

This is a hormonal shot given much like the progesterone a woman produces during the last two weeks of each monthly cycle, to stop the woman's ovaries from releasing an egg (Miller et al., 1998). They are convenient, easy to use contraceptive method. For some women, the fact that use of the method is not linked to sexual intercourse and cannot be detected are also advantageous. Long-acting injectables have no effect on lactation and can be used by breastfeeding women. It can however lead to bleeding in some women. It also disrupts the menstrual cycle in some women (Miller et al., 1998).

2.2.1.8 Intrauterine device

An intrauterine device (IUD) is a small device which is placed into the uterine cavity and provides extremely effective long-term contraception. An IUD can provide up to ten years of contraception to a woman. It is convenient and effective for most women as a long-acting contraceptive method. Once inserted, a woman needs do nothing apart from check-ups once in a while. It is also convenient for breastfeeding women. However, it predisposes women to pelvic inflammatory diseases especially in women with sexually transmitted diseases (Miller et al., 1998).

2.2.1.9 Female sterilization

This is a permanent procedure that prevents pregnancy. It works by blocking the fallopian tubes. After sterilization, a woman is permanently free from the pregnancy risks associated with sexual intercourse. There is also freedom from the inconveniences and cost effects of using the temporal measures. There are rare chances of complications and it irreversible (Miller et al., 1998).

2.2.1.10 Lactational Amenorrhea

This is the temporary postnatal or postpartum infertility that occurs when a woman is not menstruating because of regular breastfeeding that alters hormonal changes in the lactating mother. LAM is cost-free and acceptable to those who prefer a natural method, or who want to avoid or cannot use other methods of contraception right after childbirth. Additionally, the health of the infant is significantly improved through breastfeeding, especially in resource-poor areas where feeding options for infants may not be safe. There is no known side effect of this method (Miller et al., 1998).

2.3 Awareness and knowledge of modern contraceptive use

Awareness and knowledge of contraceptives is high worldwide with almost all women all over the world having significant knowledge of the use of contraceptives as a means of family planning (WHO 2008). For instance, research conducted in Egypt revealed that 95% of sexually active women are aware and know about contraceptives and their uses (Qayed, 2006). The research however showed that women's knowledge of types of contraceptives varied with socio-demographic characteristics and age (Qayed, 2006). For instance, 21% of older women who do not want any more children knew about injectable contraceptives, which offer a more lasting preventive solution to childbirth

compared with 53% of younger women (Qayed, 2006). Similarly, 92% of women interviewed knew about intrauterine devices and up to 95% approved of contraceptives as means of family planning (Qayed, 2006).

Various demographic and health surveys conducted locally in Ghana have also indicated a consistent increase in the number of respondents who are aware of contraceptives. In fact, the 2014 Ghana Demographic and Health Survey puts the figure of knowledge of modern contraceptives methods above 99%. This is a tremendous improvement compared to a little above 90% recorded in the Demographic and Health survey of 2008. (GDHS, 2008). Thus, sexually active women in Ghana (between the ages of 15-49) are very much aware of the use of contraceptives.

Knowledge of modern methods of contraceptives is universal in the Volta Region as a whole (GDHS, 2014). According to the Ghana Demographic Health survey of 2014, every respondent in the Volta Region knew about at least one method of modern contraceptive. This translates to one hundred percent (100%) knowledge of use of contraceptive in the Region (GSS, 2014). The 2014 Health Report from the Agotime-Ziope District also indicates a universal knowledge of contraceptives with a consistent uptake of modern methods over the years. The report does not however say or indicate uptake of any method among lactating mothers.

2.4 Prevalence of modern contraceptive use

Globally, there has been a significant increase in the use of contraceptives in the past few years. For instance, contraceptive prevalence increased from 54% in 1990 to 57% in 2014 (WHO, 2015). However, over 10% of all women do not still have access to or are not using an effective method of contraception (WHO, 2015). The figure is worse for Africa. In Africa, contraceptive use among sexually active women aged 15 - 49 has

only seen a marginal climb from 23% to 27% within this same time frame (WHO, 2015). Contraceptive prevalence is even lower in sub-Sahara Africa, which only moved minimally from 23% in 1990 to 24% in 2014 (WHO, 2015).

Here in Ghana, although knowledge of all types of contraceptives is high among women who are sexually active between the ages of 15 to 49, only few of them actually make use of them (GSS, 2014). For example, in the 2014 Ghana Demographic and Health Survey, 73% of the 5,321 women sampled reported not using any form of contraceptives (GSS, 2014). The low level of modern contraceptives use in the country has kept the level of mistimed and unwanted births high (GDHS, 2014). Twenty-four percent (24%) of all births during the last five years preceding the GDHS were mistimed, and 7% were unwanted. (GDHS, 2014)

The use of contraceptive in the Volta Region is even lower (GDHS, 2014). With a hundred percent knowledge of contraceptives in the region, one would have thought that a lot of women in the region would make use of contraceptives as an effective family planning method. Though contraceptive prevalence is significantly low in the Agotime-Ziope District, there has been a marked improvement on year-to-year basis between 2012 and 2015. The Annual district Health report gave 23% for 2012. This figure rose to 24.5% and 27% in the 2014 and 2015 annual reports respectively. The report also indicated a rise in uptake among teenagers with most taking up use of contraceptives as a measure against teenage pregnancy. The report further indicates that though pregnant women were given education on the usefulness and advantages of the use of contraceptives during Lactational periods, uptake among lactating mothers is not improving. The report however failed to give definite figures to buttress its point.

2.5 Factors determining modern contraceptives use

Each year, millions of women decide whether to use birth control or contraceptives as a way of planning their family sizes and spacing childbirth. Among these women who are faced with this crucial decision making process are lactating mothers who need to make informed contraceptive choices after having a baby. The decision includes the type of birth control and when to start using it (Trutt et al, 2009). Several studies carried out in developing countries in Asia and Africa have identified various factors including age, level of education, length of marriage, number of living or deceased children, sex of living children, residential area, prior discussion of family planning, partner's approval, religion and socioeconomic status as major determinants of the choice of modern contraceptive methods (Truitt, Fraser, Grimes, Gallo, & Schulz, 2015). These determinants vary largely from region to region and are influenced to a large extent by cultural differences (Tawiah, 1997). In an extensive study to determine the possible factors limiting the use of modern contraceptives in Nigeria for example, it was realised that though knowledge of modern contraceptives as a major means of family planning was widespread across the country, many women of reproductive age in the country did not use modern contraceptives due to various factors such as cost, side-effects, availability, influence of the extended family, and lack of spousal support (Uzochukwu et al., 2013). The study also revealed that though more women who were sexually active would prefer to use contraceptives to plan their family, economic factors served as a barrier limiting them from making use of it. Majority of the respondents who did not use contraceptives also expressed the fear of side effect as a major factor, which stopped them from resorting to the use of contraceptives. The respondents mentioned that, they feared that the use of contraceptives could prevent them from future childbirth. Some women also indicated their fear of non-support from their extended family if they

decided to use contraceptives. They were constantly discouraged by their extended family members never to use any contraceptive methods.

One other factor that has been found to be an important determinant is the role partners play in a woman's decision to use any modern type of contraceptive (Tawiah, 1997). For example, women whose partners favourably supported their decision or even planned the use of contraceptives with them were found to use contraceptives than women whose partners disapproved of the use of contraceptives (Odimegwu 1999). Other researches have also found other factors that determine women's access to modern contraceptives, including cultural factors, religion, cost, side effect and availability of contraceptives which are probably related to level of acceptability of the different modern contraceptives (Tawiah, 1997; GDHS, 2014). Culture is also one major determinant of women's decision to use contraceptive. Certain cultural values and norms do not easily permit women to use contraceptives (WO, 1980; Bamgboye, 1985). These values could serve as a total barrier to the use of contraceptive or prevent women from making certain contraception choices (UNDP, 2012) . Some religious practices have also been found to be the reason why women do not easily resort to the use of contraceptives as preferred family planning measure (GDHS, 2014). In new Mexico for instance, a cross section of participants interviewed did not use any method of contraception because their conservative Catholic believes frown upon such practices (Asia et al., 2015). In some studies, a number of the respondents who actually expressed their desire to use contraceptives talked about unavailability as one factor that prevented them from the use of any type of modern contraceptives. (Esprey et al., 2003).

The safety and efficacy of four contraceptive implants - plant, Implanon, Nestorone and Elcometrine - during use in the postpartum period by lactating women has also generated fear in some women causing them not to use these methods at all (Mannan,

2002; GDHS, 2014). Though these implants provide highly effective contraceptive protection with no negative effect on breastfeeding or infant growth and development, lactating mothers are generally not in favour of their use because of perceived side effects (Díaz, 2002).

2.6 Conceptual framework

Figure 1 depicts a conceptual framework showing the factors that may determine modern contraceptive use among lactating mothers. As noted in the review above, use of modern contraceptive methods among lactating mothers may be influenced by a number of factors which include but not limited to socio-demographic variables such as age, education level, religion, residence type and employment status. Age can be associated with the use of contraceptive methods in that, different age groups have different contraception knowledge and needs (Uzochukwu et al., 2013). For instance, women in mid-twenties who are in stable relationship are likely not to use contraceptive methods because it a period to bear children. However, women with advanced age above forty-five are likely to use contraceptives because they must have been done with childbirth and may want to limit it.

As shown in the figure 1, the interplay among socio-demographic, personal, factors from the community as well from the health provider can combine to affect a lactating mother's decision to use modern contraceptive. Furthermore, women with higher education level are likely to be better informed than women with lower education and therefore likely to use contraceptive methods. In addition, a woman's employment status is likely to influence the use of contraceptives, because sometimes job requirements may necessitate delay in conception.

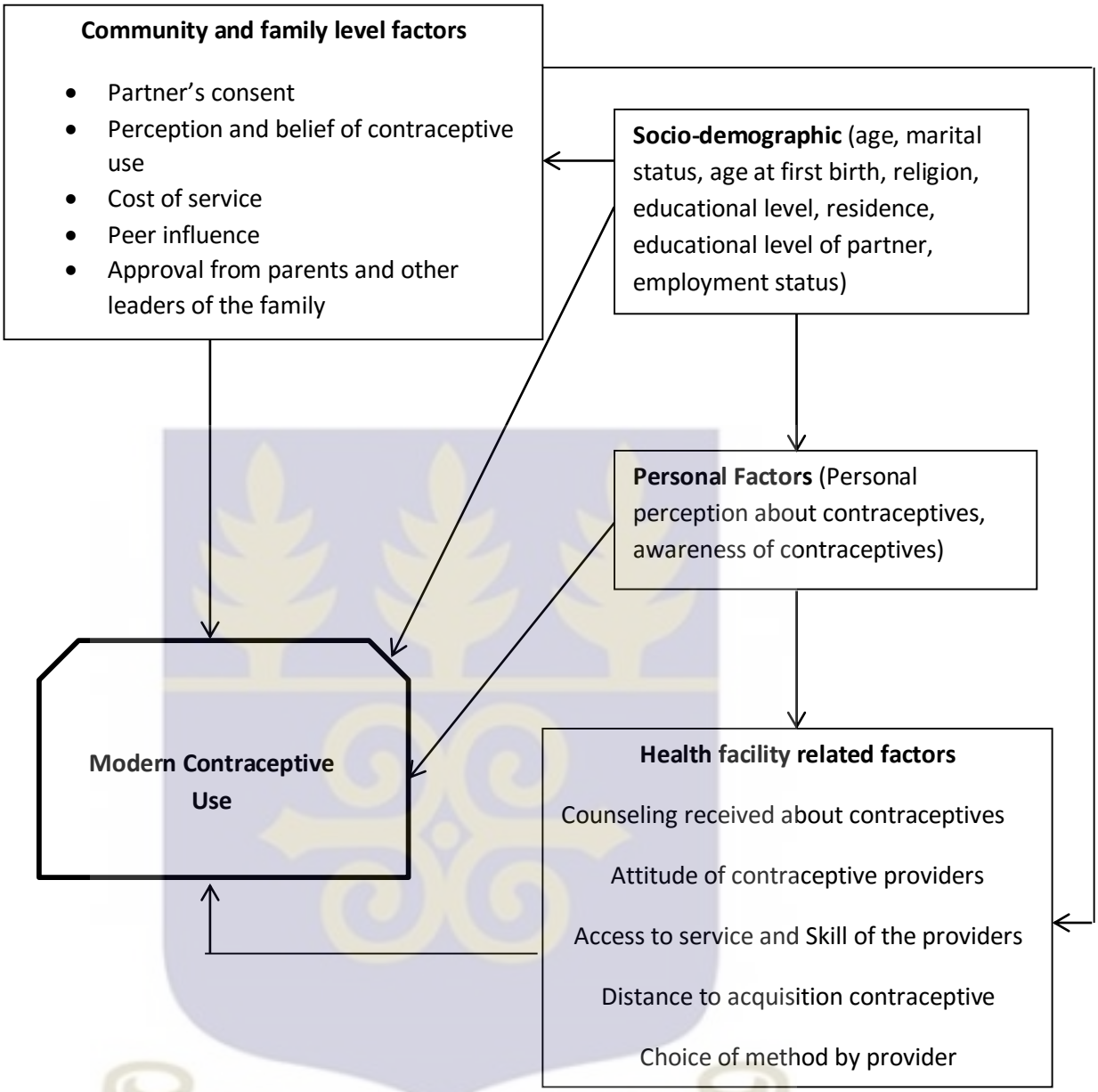

Figure 1: Conceptual framework showing the factors that determine modern contraceptive use among lactating mothers

Religious beliefs may also discourage women and their partners from using modern contraceptive methods (Trutt et al, 2009). Besides, mediating factors such as partner's influence, supply, and access to service are all important in facilitating use of modern contraceptives.

2.7 Conclusion

This chapter reviewed relevant related literature. The review indicated that despite the importance of contraceptives in preventing unplanned pregnancy, and despite high level of awareness and knowledge about contraceptives, many sexually active women still do not use contraceptives. This suggests the need for further research to understand the determinants of contraceptive use. It is in this regard that the present research becomes relevant.

CHAPTER THREE

METHODS

3.0 Introduction

This chapter describes the methods used in the study. Areas covered in this chapter include the research design, study area, study population, sample size, sampling technique, data collection and data analysis techniques.

3.1 Research Design

The research was designed as a cross-sectional survey, and it employed quantitative data collection and analysis techniques. The choice of this design was because of its advantage in facilitating the collection of original data necessary to address the research objectives. The method is also useful in collecting data that can be quantified for reporting the true picture of the situation in the district.

3.2 Study area

This study was conducted in the Agotime-Ziope District of the Volta Region of Ghana. The district is located in the South-Eastern part of the region with its capital, Agotime Kpetoe, located 22 kilometres east of the Volta Regional Capital Ho, along the Ho-Aflao Highway. The District covers a total land area of three hundred and fifteen kilometres square (315.7km2) and a population density of 88.7 persons per square kilometer.

The population of Agotime Ziope District, according to the 2010 Population and Housing Census, is 28,013, representing 1.3% of the region's total population (Ghana Statistical Service, 2015). Males constitute 48.2% and females represent 51.8%, giving a sex ratio of 93.0 males per 100 females (Ghana Statistical Service, 2015).

The District's population is predominantly rural with more than 75% of its population living in rural localities (Ghana Statistical Service, 2015). The population of the district is youthful, with about 37% below 15 years and a small number of elderly persons (9.1%) who are 60 years and older (Ghana Statistical Service, 2015). Total Fertility Rate for the district is 3.8 births per woman, while General Fertility Rate is 109 births per 1,000 women aged 15-49 years (Ghana Statistical Service, 2015). Crude Birth Rate (CBR) is 27 births per 1,000 population while crude death rate for the district is 5.9 deaths per 1,000 population (Ghana Statistical Service, 2015).

Additionally, about 44.8% of the population aged 12 years and above is married (Ghana Statistical Service, 2015). Three out of every five persons aged between 30 and 59 years are married (Ghana Statistical Service, 2015). Among the married, 30.8% have no education while 7.7% of the never married have never been to school (Ghana Statistical Service, 2015). More than three quarters of the married population (85.4%) are employed; 1.4% are unemployed and 13.2 percent are economically not active ((Agotime-Ziope District Assembly, 2014). A greater proportion of those who have never married (61.3%) are economically not active ((Agotime-Ziope District Assembly, 2014). Of the population 11 years and older, 75.7% are literate and 24.3% are not-literate (Ghana Statistical Service, 2015). The proportion of not-literate females (32.8%) is higher than that of males (14.9 %) (Ghana Statistical Service, 2015). The average number of persons per house is 4.4 and average household per house is 1.1 (Ghana Statistical Service, 2013).

In terms of healthcare delivery, the district has eight (8) health facilities, comprising three (3) clinics, and five (5) Community based Health Planning Service (CHPS) compounds all of which provide family planning services. The three (3) clinics have

maternity units that cater for prenatal and postnatal needs of women, family planning services and mental health services. They also have HIV testing and counseling units (Agotime-Ziope District Assembly, 2014).

3.3 Study Population

The study population included lactating mothers who have crossed their third month since delivery and have not exceeded their twenty-fourth (24th) months postpartum. Per the records of the district health directorate, the district recorded about 900 (15%) of the proportion of women in the reproductive age 15-49 years delivering in 2015. This figure was used as the population for the study. In selecting respondents for this study, contacts were first made with the District Health Directorate and District Assembly for approval. The Health Directorate and District Assembly both gave approval and an introduction letter to all the clinics and CHPS compounds were issued me.

3.4 Sample size determination

The Annual District Health Report for Agotime-Ziope District indicated the number of new deliveries at 557 for 2015. A sample size was drawn that enabled the study to make an inference about the breastfeeding population as well as helped in drawing relevant conclusion. In determining the sample size, a 95% confidence interval and a 5% margin of error were applied. The contraceptive prevalence rate (CPR) is usually defined as the percentage of currently married women who are currently using a method of contraception. In order to determine an appropriate sample size for the study, the study used Cochran (1963:75) formula. The formula is denoted as follows:

$$\frac{Z^2 * p(1-p)}{d^2}$$

Where:

z = z score for 95% confidence interval

p = 5.8% prevalence of contraceptive use among lactating mothers from previous study in Egypt.

d = margin of error or precision at 5%

The above formula is useful when calculating a sample size from a finite population as the final sample size is representative enough of the population.

Computing the above equation gave a minimum sample size of 83.94, which was rounded up to 84. However, in order to ensure greater representativeness and enhance the generalizability of the findings as seen in previous studies, the sample size was doubled to 168.

3.5 Sampling method

In selecting the participants, a stratified random sampling technique was used. This involved a number of processes. First, the postnatal attendance cards of all the 557 lactating mothers covering all 8 health facilities within the district were obtained. Second, the postnatal attendance cards of all the 557 lactating mothers were given numbers from 1-557. Third, a random sampling technique was then used to select the desired number of 164 lactating mothers. Where a lactating mother who was selected through this random selection process was unavailable or refused to take part in the study, this procedure was repeated until all 164 respondents were arrived at.

3.6 Data Collection techniques and tools

Structured questionnaire was used to collect data. The questionnaire was designed in English but the questions were asked in the local dialect, Ewe, for better understanding of participants who did not have formal education and could not speak English. The questions focused on collecting information on the socio-demographic characteristics of respondents, awareness, knowledge and use of contraceptives and factors that influence use or non-use of contraceptives.

3.7 Pre-testing of instrument and quality control

Before actual data collection, the questionnaire was pre-tested among lactating mothers who attended clinic at the Adaklu-Sofa and Adaklu-Waya Health centres. These two healthcare centres in the Adaklu District and the respondents were not part of the actual survey. Pretest enabled all errors in the questionnaire to be corrected as well as enabled the researcher to gauge the length of time it took to complete one questionnaire.

As a quality control measure, a day training was organised for field assistants who helped with the collection of data prior to the collection of data. Supervision was carried out by the principal investigator while research assistants undertook field work. A daily review of work was done and emerging problems immediately addressed. Also, completed questionnaires were checked for completeness. Two independent people entered the data with the help of the principal investigator and the output was checked to ensure accuracy.

3.8 Data entry and processing

Completed questionnaires were retrieved, coded and entered into Microsoft Excel. The data was then exported to STATA Version 13 for analysis.

3.9 Data analysis

3.9.1 Variables

The variables assessed and measured included the following:

Outcome/dependent Variable

The outcome variable for this study was **Modern Contraceptive Use**. Modern contraceptives use here referred to the use of the following methods: female sterilisation, male sterilisation, intrauterine device (IUD), implants, injectable, the pill, male condoms and female condoms, and lactational amenorrhoea method (LAM).

Independent Variables

A number of independent variables were considered in the study. These included age, educational status, knowledge about modern contraceptives, attitudes of community towards modern contraceptives, sex preference of children, partner's consent, fear of side effects, counseling received about contraceptives, attitudes of the contraceptive providers, religion, and traditional beliefs, proximity to health facility, drug store or pharmacy, availability of preferred method, affordability of available methods.

3.9.2 Analysis

Descriptive statistical analysis including frequency and percentage distribution were performed to describe modern contraceptive use, patterns, knowledge and attitudes

among lactating mothers. Bivariate and logistic regression analyses were then used to examine factors associated with modern contraceptive use. Confidence level was set at 95% and P<0.05 (at 5% level of significance) was considered as significant. Results were presented in tables, graphs and charts.

3.10 Ethical clearance

Ethical approval was sought from the Ethical Review Committee of the Ghana Health Service. Permission was also sought and obtained from the District Health directorate of the Agotime-Ziope District and Agotime-Ziope District Assembly. Further permission was sought from the administrators of the various health facilities before the study commenced. In furtherance of ethical demands of this research, consent was sought from participants after detailed explanation of what the study entailed was rendered. For the purpose of confidentiality, participants were required to answer questionnaire without their names being written on the questionnaire. Of crucial note is the fact that participation in the study was on voluntary basis and all lactating mothers taking part in the research were adequately informed of their rights to terminate participating in the study at any time without any penalty whatsoever.

3.11 Conclusion

This chapter described the methods used in the study. The chapter discussed the study design, study population, sampling techniques, data collection and data analyses methods. The next chapter presents the results of the study.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter focuses on the presentation of the findings of the research. The chapter discusses the socio-demographic characteristics of respondents, awareness and knowledge of modern contraceptives, use of modern contraceptives and factors influencing use of modern contraceptives among lactating mothers in the Agotime-Ziope District of the Volta Region.

4.1 Socio-Demographic Characteristics of Respondents

Table 4.1 presents information on the socio-demographic characteristics of the respondents. A total of 164 respondents were originally planned to take part in the study. However, questionnaires were completed for 160 respondents, giving a response rate of approximately 98%. Of the 160 respondents who took part in the study, the majority (25%) fell between age 19-23, followed by (24%) who fell between 24 to 28 years. The least, (14%), were above 34 years of age.

In terms of formal education, 146 respondents had at least some basic education. Only 9% of the respondents had no formal education. Majority of respondents were Christians (82%). The rest were either Muslims (11%) or women who belong to the African Traditional Religion (7%).

Table 4.1: Socio-demographic characteristics of respondents

Characteristic	Frequency	Percent
Age		
14-18	35	22
19-23	41	25
24-28	38	24
29-33	24	15
34+	22	14
Marital Status		
Married	83	52
Cohabiting	45	28
Unmarried	32	20
Educational Level		
No formal education	14	9
Primary education	28	17
JSS/JHS	55	35
SSS/SHS	45	28
Tertiary	18	11
Partner's Educational Level		
No formal education	19	12
Primary education	5	3
JSS/JHS	23	14
SSS/SHS	80	50
Tertiary	33	21
Employment status		
Employed	35	22
Self-employed	50	31
Unemployed	75	47
Residence		
Rural	111	69
Urban	49	31
Religion		
Christian	131	82
Islam	18	11
Traditional	11	7
Age at first birth		
15-19	63	39
20-24	71	45
25 and above	26	16
No. of children alive		
Less than 3	125	78
3 and above	35	22
Age of last child		
Less than 1 year	96	60
1 year and above	64	40
Additional children expected		
None	28	18
1-2	79	49
3 and above	53	33

Also, 47% respondents were unemployed, while the rest were either in self-employment (31%) or formally employed in both public and private sector (22%). Majority of the respondents (69%) live in rural communities with the rest living in urban communities. Also, 52% (83) of the respondents were married, 28% (45) were co-habiting and 20% (32) were not married. Majority of the respondents (78%) had less than 3 surviving children. Some 39% of the respondents had their first birth before they turned 20, while 45% had theirs between the ages of 20 and 24. The rest (16%) had their first births after age 25. Majority of the respondents (82.5%) also reported that they would have more births after the current one.

4.2 Awareness and Knowledge of Contraceptives.

Awareness of contraceptive among lactating mothers in this study was almost universal: 99% of the respondents reported that they have heard about contraceptives before (Table 4.2). Only 2 of the respondents said they had no idea what contraceptives were. All those who acknowledged hearing about contraceptives, Hospital/Clinic (through healthcare workers), television, radio, school/books, dailies, and friends were their main sources of information about modern contraceptives.

Table 4.2: Awareness and Knowledge of Modern Contraceptives.

Characteristic	Frequency	Percent
Ever heard about modern contraceptives		
Yes	158	99
No	2	1
Source of information on modern contraceptives*		
Hospital/Clinic	158	99
Television	43	27
Radio	62	38
School/Books	32	20
Dailies	8	5
Friends	10	6
Know any modern contraceptive methods		
Yes	158	99
No	2	1
Methods known*		
Pills	139	87
Injectables	153	95
IUD	18	11
Condoms	157	98
Diaphram	13	8
Implant	76	47
Sterilization	41	26
LAM	153	95
Emergency	37	23
Knows a place to get modern contraceptive		
Yes	153	95
No	7	5
Specific place to get modern contraceptive*		
Hospital/Clinic	146	91
Pharmacy/Drug store	128	80
Friends	18	11
Thinks contraceptive can give 100% protection against pregnancy		
Yes	51	32
No	74	46
I don't know	35	22
Thinks contraception is a woman's business		
Yes	40	25
No	120	75
Thinks women who use contraceptives become promiscuous		
Yes	20	13
No	140	87

All the 99% (158) respondents who said they have ever heard about modern contraceptives also reported knowing at least one contraceptive method. Modern

methods that were identified included condoms, injectables, Lactational amenorrhea method (LAM), pills, implants, sterilization, emergency contraceptive pills, intrauterine devices, and diaphragms (see Table 4.2). Two traditional contraceptive methods that were also reported included rhythmic method (periodic abstinence) and withdrawal methods (coitus interruptus).

Among the respondents who have ever heard about modern contraception, 95% said they knew of a place in their community where they could get a modern contraceptive. Health facilities and drug store or a pharmacy were the dominant places where most respondents could get modern contraceptives from. Only 11% of 158 respondents who said they have ever heard about modern contraceptives reported that their friends could provide them with their choice of contraceptive methods if needed.

To further assess respondents' knowledge of contraception and its efficacy, they were asked whether they thought contraceptives provided 100% protection against pregnancy. Here, 32% of the respondents agreed contraceptives provide 100% protection from pregnancy, while 46% said contraceptives do not provide 100% protection against pregnancy. Some 22% of the respondents however did not know if contraceptives could or could not provide 100% protection from pregnancy. Also, three quarters of the respondents were of the view that contraceptive use is not a woman's business entirely and that such a decision should either be coming from the partner or should be a joint agreement between both partners. However, 25% of the respondents said contraception was a woman's business. Finally, when respondents were asked whether they thought women who use contraceptives may become promiscuous, 87% and 13% said no and yes respectively.

4.3 Modern Contraceptive Use among Lactating Mothers

Out of 158 respondents who have heard about modern contraceptives, more than half (57%) said they have used modern methods of contraception before while 43% said they have never used any modern method of contraception before (see Table 4.3).

Table 4.3: Modern Contraceptive Use among Lactating Mothers

Characteristic	Frequency	Percent
Ever used any modern contraceptive		
Yes	69	57
No	91	43
Modern method ever used*		
Pills	25	36
Injectables	19	27
IUD	0	0
Condoms	54	78
Diaphragm	0	0
Implant	9	13
Sterilization	1	2
LAM	52	75
Emergency pills	4	6
Currently using any modern method		
Yes	46	29
No	114	71
Modern method currently using		
Pills	17	37
Injectables	12	26
IUD	0	0
Condoms	9	20
Diaphragm	0	0
Implant	2	4
Sterilization	1	2
LAM	4	9
Emergency pills	1	2
Reason for using modern contraceptives		
To avoid Pregnancy	23	33
To delay childbirth	44	64
To limit childbirth	2	3
Reasons for using current method*		
Safe	22	48
Effective	39	85
Low side effect	21	46
Only method known	0	0
Only method available	1	2
Health provider's choice	14	30
Affordable	1	2
Convenience	17	37
Privacy	5	11
Length of time current method has been used		
One to 12 months	32	70
One to 2 years	14	30
Frequency of use of current method		
Every time	38	83
Once a while	8	17

Use of modern contraceptive during last sexual activity		
Yes	39	25
No	121	75
Method used during last sexual activity		
Pills	17	37
Injectables	12	26
IUD	0	0
Condoms	9	20
Diaphragm	0	0
Implant	2	4
Sterilization	1	2
LAM	4	9
Emergency pills	1	2

*Multiple responses allowed

Among the reasons given for the use of these contraceptives, usage as means of preventing pregnancy, and to delay childbirth were two major ones. Only 3% of the respondents do so now to limit childbirth.

Of all the various methods ever used by these respondents, condom (78%) was indicated the highest among the list of modern contraceptives. This is followed by LAM with 75% respondents, pills (36%), injectables (27%), implant (13%), emergency pills (6%), and sterilization (2%). Interestingly, majority (71%) of the respondents indicated that they were not currently using any method of contraception. Of those who were currently using any method however, 37% used pills, while condom and injectables users were 20% and 26% respectively. Also 9% of respondents indicated they were using LAM; and 4% were using implants (see Table 4.3). Reasons given for their current choice of methods ranged from 'effective' (85%) to 'only method available' (2%) and 'affordable' (2%).

Out of the total number who said they currently use contraceptives, 70% said they have been using it from between one to 12 months. The rest have been using theirs for more than a year now. Also, 83% of the respondents who said they currently use

contraceptives reported using the method all the time, while 17% said they use the method once a while.

In relation to use of any modern contraceptive during their last sexual act, only 25% said they used one and the rest (75%) said they had sex without contraceptives. Out of the 25% of respondents who used any modern contraceptive during their last sexual act, 12 (26%) said they had contraceptive injection, 17 (37%) intimated they used the pill, 9 (20%) used condoms and 4 (9%) used LAM (see table 4.3).

4.4 Factors determining use of modern contraceptives

The main objective of this study was to examine the determinants of modern contraceptive use among lactating mothers. To achieve this objective, the study first looked at factors that respondents perceived to be influencing non-use of modern contraceptives among lactating mothers. The results are presented in Table 4.4.

Majority of the respondents (96%) thought women do not use contraceptives due to fear of side effects. Other important reasons include religious prohibitions and beliefs (77%), and opposition from partners (88%).

Table 4.4: Reasons why lactating mothers do not use modern contraceptives

Reason*	Frequency	Percent
Religious prohibitions and beliefs	123	77
Long distance to contraceptive services	10	6
Poor attitude of contraceptive providers	10	6
Opposition from partner	140	88
Fear of side effect	153	96
Lack of knowledge of contraceptive methods	13	8
Infrequent sex	29	18
Hard to get preferred methods	6	3
Too costly	7	4
No or poor counseling received about contraceptives	12	8
Cultural or traditional beliefs that frown on contraceptive use	82	51

*Multiple responses allowed

4.4.1 Socio-demographic factors determining contraceptive use among lactating mothers

Table 4.5 presents information on bivariate analysis of socio-demographic factors associated with contraceptive use among lactating mothers. The results show that 'age at first childbirth' was significantly associated with contraceptive use ($p<0.039$). The 'educational status of the respondents' and that of her family head' was also associated with modern contraceptive use ($p<0.003$). All the respondents (100%) whose family head had no education did not use contraceptive while most of the respondents (80.0%) whose family heads had at least primary education reported to use contraceptives compared to 20.0% of them who did not use contraceptives. Religion was also associated with modern contraceptive use.

Table 4.5: Bivariate analysis of socio-demographic associated with contraceptive use

Characteristic	Contraceptive use, n (%)		Chi-square *P*-value
	Yes	No	
Age in years			
14-18	8(22.9)	27(77.1)	
19-23	13(31.7)	28(68.3)	
24-28	11(29.0)	27(71.0)	
29-33	7(29.2)	17(70.8)	0.324
34+	7(21.4)	15(78.6)	
Marital status			
Married	25(30.1)	58(69.9)	
Not married	7(21.9)	25(78.1)	0.626
Co-habiting	14(31.1)	31(68.9)	
Educational status			
No education	1(7.14)	13(92.9)	
Primary	3(10.7)	25(89.3)	
JSS/JHS	15(27.3)	40(72.7)	0.0001*
SSS/SHS	12(26.7)	33(73.3)	
Tertiary	15(83.3)	3(16.7))	
Employment status			
Employed	11(31.4)	24(68.6)	
Self-employed	13(26.0)	37(74.0)	0.852
Unemployed	22(29.3)	53(70.7)	
Religion			
Christian	39(30.0)	91(70.0)	
Islam	3(12.0)	22(88.0)	0.007*
Traditional	4(80.0)	1(20.0)	
Residence			
Rural	25(22.5)	86(77.5)	0.009*
Urban	21(42.9)	28(57.1)	
Number of children alive			
Less than 3	36(30.0)	84(70.0)	0.545
3 and above	10(25.0)	30(75.0)	
Age at first childbirth			
15-19	11(17.5)	52(82.5)	
20-24	26(36.6)	45(63.4)	0.039*
25 and above	9(34.6)	17(65.4)	
Additional children expected			
None	10(35.7)	18(64.3)	
One	24(30.4)	55(69.6)	0.421
Two	12(22.6)	41(77.4)	
Age of last child			
Less than 1 year	27(28.1)	69(71.9)	0.831
1 year and above	19(29.7)	45(70.3)	
Educational status of family head			
No education	0(0.0)	19(100.0)	
Primary	4(80.0)	1(20.0)	
JSS/JHS	6(26.1)	17(73.9)	0.003*

SSS/SHS	23(28.8)	57(71.2)
Tertiary	13(39.4)	20(60.6)

P<0.05

4.4.2 Other factors determining contraceptive use among lactating mothers

Table 4.6 also presents information on other factors that influence contraceptive use among lactating mothers. A bivariate analysis showed that whether women felt they could get contraceptives by themselves was significantly associated with contraceptive use (p<0.001). Respondents who also thought contraceptive could give 100% protection against pregnancy were also associated with use. Most of the respondents (85.5%) who indicated they could not get contraceptives by themselves were not using contraceptives compared to 14.5% of them who used contraceptives (p<0.001). However, factors such as knowing a place to get contraceptives, contraception as a women's business among others were found not be associated with contraceptive use (see Table 4.6)

Table 4.6: Bivariate analysis of other factors associated with contraceptive use

Characteristic	Contraceptive use, n (%)		Chi-square *P*-value
	Yes	**No**	
Knows a place to get modern contraceptive			
Yes	45(29.4)	108(70.6)	0.387
No	1(14.3)	6(85.7)	
Thinks contraceptive can give 100% protection against pregnancy			
Yes	28(41.2)	40(58.8)	
No	11(19.0)	47(81.0)	0.011*
Don't know	7(20.6)	27(79.4)	
Thinks contraception is a woman's business			
Yes	12(30.0)	28(70.0)	0.840
No	34(28.3)	86(71.7)	
Thinks women who use contraceptives become promiscuous			
Yes	4(20.0)	16(80.0)	0.346
No	42(30.2)	97(69.8)	
Can get contraceptive by self			
Yes	35(41.7)	49(58.3)	0.0001*
No	11(14.5)	65(85.5)	

***p<0.05**

4.4.3. Logistic regression of the factors that determining contraceptive use

Table 4.7 presents the findings from the logistic regression of the potential determinants of contraceptive use. The results showed a significant association between age of the respondents at first childbirth and contraceptive use.

Table 4.7: Logistic regression of the factors determining contraceptive among lactating mothers

Factors	Contraceptive use, n(%)		Unadjusted OR(95%CI)	Adjusted OR(95%CI)
	Yes	No		
Educational status				
No education	1(7.14)	13(92.9)	1	1
Primary	3(10.7)	25(89.3)	1.56(0.15-16.53)	1.19(0.02-58.88)
JSS/JHS	15(27.3)	40(72.7)	4.87(0.59-40.56)	7.29(0.16-328.54)
SSS/SHS	12(26.7)	33(73.3)	4.73(0.56-40.12)	3.88(0.09-161.93)
Tertiary	15(83.3)	3(16.7))	64.99(6.00-703.67)*	112.10(1.71-736.45)*
Religion				
Christian	39(30.0)	91(70.0)	1	1
Islam	3(12.0)	22(88.0)	0.32(0.09-1.13)	0.36(0.06-2.05)
Traditional	4(80.0)	1(20.0)	9.33(1.01-86.21)*	25.11(1.57-402.62)*
Residence				
Rural	25(22.5)	86(77.5)	1	1
Urban	21(42.9)	28(57.1)	2.58(1.26-5.30)	0.85(0.28-2.52)
Age at first childbirth				
15-19	11(17.5)	52(82.5)	1	1
20-24	26(36.6)	45(63.4)	2.73(1.21-6.14)*	2.29(0.69-7.56)
25 and above	9(34.6)	17(65.4)	2.50(0.89-7.06)	1.52(0.26-8.76)
Educational status of family head				
Tertiary	13(39.4)	20(60.6)	1	1
Primary	4(80.0)	1(20.0)	6.15(0.62-61.37)*	6.37(0.42-96.42)
JSS/JHS	6(26.1)	17(73.9)	0.54(0.17-1.74)	0.32(0.06-1.76)
SSS/SHS	23(28.8)	57(71.2)	0.62(0.27-1.45)	0.28(0.08-1.00)
No education	0(0.0)	19(100.0)		
Thinks contraceptive can give 100% protection against pregnancy				
Yes	28(41.2)	40(58.8)	1	1
No	11(19.0)	47(81.0)	0.33(0.15-0.76)*	0.09(0.02-0.37)*
Don't know	7(20.6)	27(79.4)	0.37(0.14-0.97)*	0.18(0.05-0.71)*
Can get contraceptive by myself				
Yes	35(41.7)	49(58.3)	1	1
No	11(14.5)	65(85.5)	0.24(0.11-0.51)*	1.04(0.32-3.38)

*p<0.05; OR=odds ratio; CI= confidence interval; ref= reference group of the categories.

The odds of contraceptive use was 2.73 higher among lactating mothers who had their first child at ages 20-24 compared to mothers who had their first children at ages 15-19 (OR=2.73; 95%CI=1.21-6.14). There was also a 6.15 higher odds of not using contraceptive among respondents whose family head had primary education compared to respondents whose family head had tertiary education (OR=6.15; 95%CI+1.60-61.37). Furthermore, there was also decreased odds of 0.24 of contraceptive use among mothers who indicated they could not get contraceptives by themselves compared to mothers who indicated they could get a contraceptives by themselves (OR=0.24; 95%CI=0.11-0.51).

4.5 Conclusion

In this chapter, the results of the study has been presented. The results showed that most lactating mothers surveyed in this study had knowledge of modern contraceptives. However, contraceptive usage was still low. A number of socio-demographic and community and health facility level factors were found to be significantly associated with use of modern contraceptives. These findings are discussed in detail in the next chapter.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This study sought to find out if breastfeeding mothers in the Agotime-Ziope District of the Volta Region use modern contraceptives and the factors that determine their decision to use modern contraceptives. This chapter discusses the major findings from the study. The discussion comprises a summary of the main findings, comparison of the major findings with other previous works with the aim of establishing consistency or otherwise, explanations of the findings and their implications for policy and research, and reflection on the strengths and limitations of the study with particular emphasis on the method used.

5.2 Summary of findings

The study found that knowledge of contraceptive among lactating mothers in the study area is almost universal (99%). Many of the respondents also knew at least one modern method of contraception with a larger proportion indicating having knowledge of contraceptive pill and condom. Knowledge is however skewed positively towards Christians and respondents from traditional African Religious backgrounds as compared to those from an Islamic background.

Despite the high level of awareness and knowledge of contraceptives among the study respondents, actual use of contraceptives was relatively low. More than half (57%) of the respondents in this study said they have ever used modern method of contraception. Only 28.8% of the respondents are currently using any modern contraceptive. The choice of modern contraceptive methods among those who use contraceptives was influenced by factors such as safety of a method, its effectiveness, decision of healthcare

provider and convenience of method. Only a few indicated cost as a factor they consider in choosing a method of contraceptive.

Finally, socio-demographic characteristics such as age of the respondents at first childbirth, educational status of the respondents, her religious background, and indeed the educational background of the respondents' head of family all have significant influence on the uptake of any method.

5.3 Consistency with previous research

The study found that current contraceptive prevalence rate among lactating mothers in the Agotime –Ziope District was 28.8%. This figure compares favourably with Ghana's national contraceptive prevalence rate of 27% among married women (GDHS, 2014). It also falls in line with a study among lactating mothers in Port Harcourt, Nigeria, which found that 25.7% of the respondents did actually use at least one method of modern contraceptive (Nyengidiki et al., 2011). Just as confirmed in the Port Harcourt study and in the Ghana Demographic and Health Survey (GDHS) of 2014, most respondents who used modern contraceptives used condoms the most. This is however very low considering the contraceptive awareness level of almost 99%. This same level of awareness is reported among married women in the country and a universal awareness (100%) for Volta Region (GDHS, 2014). It is however higher than that observed among lactating mothers in Nigeria as observed by Nyengidiki et al. Knowledge of methods like IUD and diaphragm is almost nonexistent as almost every respondent reported not having any idea about these methods. This is in stark contrast to findings from one study to gauge knowledge of contraceptive methods (Qayed, 2006). In this particular study, as many as 92% of women interviewed knew about IUDs (Qayed, 2006).

Majority of respondents were Christians which is not so surprising because the Volta Region and for that matter Agotime-Ziope District is predominantly a Christian community. As indicated in other studies (Rahman & Kabir, 2005; GDHS 2014), contraceptive awareness and prevalence is higher among Christians than any other religious groupings. However, the study did not explore the impact of denominational influence on the uptake or use of contraceptives.

The study also indicated an urban-rural differential in the use of contraceptives. Though no difference exists between knowledge of use and methods in these two residential areas, results from the study showed a relatively higher use among respondents in urban settings. Similar results were reported in a study conducted in 10 sub-Saharan countries to explore contraceptive use differentials (Pacqué-margolis, Cox, Puckett, & Schaefer, 2013). This particular study showed higher patronage of modern contraceptives in urban dwellers compared to their rural folks. Same was report by the 2014 Ghana Demographic and Health Survey.

Partners' approval is also indicated as a significant factor influencing use or uptake of modern contraceptive among lactating mothers. Current use is directly related to frequency of discussion of family planning with the partner. Among currently lactating mothers, 38% of those who use did not discuss with partner and 56% of those who had discussed contraception with their partner were currently on a modern contraceptive method. This is in line with a study long conducted in Ghana to determine factors influencing use of contraceptives. In that study however, only 7% of those who did not discuss with partner used and 30% of those who involved their partners in decision making process used (Tawiah, 1997). Partner's level of education is also positively indicative of a lactating mother's use of modern contraceptive with a woman chance of

using a modern method increases as her partner's educational level increases. Similar have been reported by Tawiah (1997).

More than three quarters of lactating women who did not use modern contraceptives indicated that fear of possible side effect was why they did not use. This supports findings by Uzochukwu et al. (2013), and most recently by the GDHS (2014) that a major factor that influenced use of modern contraception is fear of side effect. However, in contrast to some major works to determine factors that influenced uptake of contraceptives (see Tawiah 1997; Rahman and Kabir, 2005; Uzochukwu et al. 2013), age and employment status were not found in this study as possible factors which could influence a woman's decision to use a contraceptive.

5.4 Explanation of findings and implications

The study found a very high contraceptive awareness. This however did not translate into actual usage. This could be a result of the fear of side effect of the various methods as a direct manifestation of the myths surrounding the methods.

From the results of the study, contraceptive use among lactating mothers below the age of 20 (15-19) was very low despite the risks associated with another conception around that age bracket. Their inability to use any method could be blamed on very little knowledge on the various methods and also the shyness to approach health personnel for assistance on contraceptive methods. From the finding, it is evidently clear that most of these teenage girls do not have partners and since partners have tremendous influence on a woman's decision to use modern contraceptive methods, they were disadvantaged by this.

Also, very few respondents thought women who use contraceptives may be promiscuous. Such thinking may underscore the low level of uptake of contraceptives among some lactating mothers in the district. There is therefore need for more health education to help dispel such notions.

Very little is known about Intrauterine devices and Diaphragm as methods of contraception among lactating mothers in this study. This could be due to the fact that health personnel who are major source of contraceptive information in the district are not given the necessary skill-set needed to educate and provide services related to these two methods.

From the study, it became apparently clear that partner's support is key to contraceptive uptake. This is to be expected because partners who approve of family planning are more likely to ensure that their favourable attitude is translated into high use of contraception. These findings bear some important policy implications especially on the part of education and awareness creation. Men should also be included when it comes to education and awareness creation on contraceptives.

Related to the above, many women who participated in the study believed contraceptive was not a woman's business. It is little surprising that most respondents who took up the methods did so with explicit support from their partners. Woman must therefore be empowered to engage their partners on the issue of contraceptive use since the benefits thereof outweigh the risks.

From the findings, most respondents sourced their methods from drug stores and among them, majority listed condoms and pills as their main method of choice. If this is anything to go by, one could easily conclude that lack of preferred methods at the health facilities or the poor attitudes of healthcare providers could also be hampering use of

contraceptives. There is a reasonable health implication here since there are more health facilities in the district than there are drug stores.

5.5 Strengths and Limitations

This study is the first in the district according to the District Health directorate and it was one major subject matter they wanted explored so as to help evaluate their efforts so far to improve contraceptive use especially among lactating mothers. Though the study did not set out to find out anything regarding teenage pregnancy, at the end we had a fare idea of the level of teenage mothers in the district. This could have a policy implication for the district health directorate in terms of their target audience during such education outreaches.

However, the study has some limitations. A major limitation was the fact that the questionnaire was in English language. Though the interviewers were encouraged to use the local languages to explain points and ask the questions to the respondents, certain terms like contraceptive had to be interchanged with family planning since we could not get a clear-cut word in the local dialect for contraception. Also, because the study design was a cross-sectional survey, there was no opportunity to deeply probe the reasons for the different levels of acceptability and use of modern contraceptives in the district. Future research could therefore explore the use of qualitative study designs to throw more light on these issues.

5.6 Conclusion

In conclusion, this chapter reflected on the results of this study. The discussion in the chapter suggests that despite the high level of awareness about contraceptive among lactating mothers in the district, actual usage of contraceptives is still very low. Socio

demographic characteristics like age and employment status had very little or no influence on the use of contraceptives. What is found to be a major contributing factor is partner's support of use of the methods. Fear of side effect is found to be the major factor limiting the use of modern contraceptives. These findings highlight the need for remedial actions to be taken to improve contraception use among lactating mothers. In this regard, specific recommendations are made in the next chapter.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study set out to examine the determinants of modern contraceptive usage among lactating mothers in the Agotime-Ziope District of the Volta Region. To achieve this objective, a cross-sectional survey was conducted among 160 randomly sampled lactating mothers. Structured questionnaires were used to collect data. The data were analysed using descriptive, bivariate and logistic regression analysis techniques. Findings suggested that although contraceptive awareness among lactating mothers who took part in the study was almost universal, contraceptive prevalence was very low. Factors such as level of education, place of residence, partners influence, partner's educational level, fear of side effects, poor attitudes of healthcare providers and partners being opposed to use of modern contraceptives all important determinants of modern contraceptive use. On the basis of these findings, it is concluded that high levels of awareness of contraceptive methods may not necessarily result in actual use. It is therefore important for additional measures and intervention to be implemented to help translate high awareness and knowledge of modern contraceptives among lactating mothers into actual contraceptive usage. In this regard, specific recommendations are made in the next section of this chapter.

6.2 Recommendations

Based on the findings presented and discussed in the previous chapters, the following recommendations are made.

1. First, vigorous campaigns to further disseminate and reorient lactating mothers and women of reproductive age in general on the use of contraceptives and the

various methods should be undertaken by Ghana Health Service in the Agotime-Ziope District. This should be aimed at disabusing the minds of these women on the perceived side effects of the methods. It is particularly recommended that the Agotime-Ziope District Health Management team develop and implement educational interventions for lactating mothers that will enable them understand the importance of using modern contraceptive methods.

2. Second, the Ghana National Family Planning Programme should intensify not only its information, education and communication programmes on family planning to cover particularly the neglected rural areas but also, more importantly, adjust them to suit local conditions. In order to win more clients there is need for a continuous dialogue on the various contraceptive methods between service providers and clients so as to allay some of the clients' fears about supposed side effects of contraception. In this regard, healthcare providers should be empowered with the requisite skills and knowhow to properly provide services such as insertion of IUDs and diaphragm. The health facilities within the districts should also be adequately equipped to enable them provide the needed services

3. Third, men's disapproval is one major reason why some lactating mothers do not use modern contraceptives. It is therefore recommended that the Agotime-Ziope District Health Management and Ghana Health Service in general should also engage men and educate them on the importance of the use of modern contraceptives so that they may support or encourage their partners to use the methods.

4. Fourth, and related to the third recommendation above, I recommend the establishment of more PPAG groups for men at community level and work-places to help improve communication between spouses and thereby promote more discussion on contraception and other family planning related issues. This is even more important since partners' support was seen in this study to be key in the uptake of contraceptives.

5. Finally, more research (both quantitative and qualitative) should be conducted in other districts of the Volta region to help generate more evidence on contraceptive use patterns and behaviours among lactating mothers and the reasons underlying such patterns and behaviours.

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APPENDICES

APPENDIX I: INFORMED CONSENT FORM

- This questionnaire is part of a research by our student **MR GODWIN KETEKU** towards the award of Masters in Public Health from the University of Ghana.
- The research is aimed at determining if lactating mothers in the Agotime-Ziope District of the Volta Region use modern contraceptives. It is also to determine their choice of modern contraceptives and factors that influence their choice.

Right to refuse

Your consent to participate in this study is voluntary, you are not under any obligation to do so, and you are at liberty to withdraw from this study at any point in time. However, I will appreciate if you can complete it.

Anonymity and confidentiality

Be assured that any information given will be used purely for the purpose of research. Any information given will be treated with utmost confidentiality. Your name will not be used in any report, but your ideas and suggestions will help us to design a program that will improve the patronage and usage of modern contraceptives by the target group in the district.

Your rights as a Participant

This research has been reviewed and approved by the Ethical Review Committee of the Ghana Health Service. If you have any questions about your rights as a research participant you can contact the Ethical Review Coordinator on 0507041225/0243235225 or School of Public Health, Legon.

Signature of Participant:……. Thumbprint:

Name of Witness:……..
Signature:……..

Date:……..

APPENDIX II: QUESTIONNAIRE

TOPIC: DETERMINANTS OF MODERN CONTRACEPTIVE USE AMONG LACTATING MOTHERS IN THE AGOTIME-ZIOPE DISTRICT OF THE VOLTA REGION OF GHANA

- This questionnaire is part of a research by our student **MR GODWIN KETEKU** towards the award of Masters in Public Health from the University of Ghana.
- The research is aimed at determining if lactating mothers in the Agotime-Ziope District of the Volta Region use modern contraceptives. It is also to determine their choice of modern contraceptives and factors that influence their choice.

Interview Date:_____ DISTRICT: Agotime-Ziope

Interviewer Name: _____ Interviewer Code: _____

(All information in this questionnaire is confidential).
NB: **ONLY** LACTATING MOTHERS MUST BE INTERVIEWED
PLEASE DO NOT DISCARD THIS QUESTIONNAIRE. GIVE IT BACK TO THE COORDINATOR EVEN IF IT IS DAMAGED.

Community:_____
Questionnaire No.

Section 1: Demographic information (Please tick one)

1	Age (years)	
2	Marital Status	1. Married [ ] 2. Not married [ ] 3. Divorced [ ] 4. Separated [ ] 5. Co-habiting [ ] 6. Other, please specify ……
3	Educational level	1. No Education [ ] 2. Primary [ ] 3. J.S.S/J.H.S [ ] 4. S.S.S/S.H.S [ ] 5. Tertiary [ ]
4	Residence type	1. Rural [ ] 2. Urban [ ]
5	Employment status of respondent	1. Employed [ ] 2. Self-employed [ ] 3. Unemployed [ ]

6	Religion of respondent	1. Christian [ ] 2. Islam [ ] 3. Traditional [ ] 4. Other [ ]
7	Total number of children of respondent (dead and alive)	1. [ ] 2. [ ] 3. [ ] 4. [ ] 5. [ ] 6. [ ]
8	How many children are alive (surviving)	1. [ ] 2. [ ] 3. [ ] 4. [ ] 5. [ ] 6. [ ]
9	At what age did you have your first child?	1. 15 – 19 [ ] 2. 20 – 24 [ ] 3. 25 – 29 [ ] 4. 30 – 34 [ ] 5. 35 – 39 [ ] 6. 40 – 44 [ ] 7. 45 – 49 [ ]
10	How many more children does the respondent want to have? (Tick one)	1. 1 [ ] 2. 2 [ ] 3. 3 [] 4. 4 [ ] 5. 5 [ ] 6. 0 []
11	What is the age of your last child?	1. <1 year [ ] 2. < 1½ years [ ] 3. < 2 years [ ] 4. < 2½ years [ ] 5. < 3 years [ ] 6. > 3 years [ ]
12	What is (are) the sex of your surviving child (children)?	Male Female(write number) [ ] [ ]
13	Who is head of your Family?	1. Partner [ ] 2. Respondent [ ] 3. Other [ ]
14	Educational level of head of family (ignore if respondent)	1. No Education [ ] 2. Primary [ ] 3. J.S.S/J.H.S [ ] 4. S.S.S/S.H.S [ ] 5. Tertiary [ ]

Section 2: Awareness and Knowledge of Contraceptives

15	Have you ever heard about contraception? (if No move to 24)	1. Yes [ ] 2. No [ ]
16	If yes, how did you hear about it?	1. Health Worker [ ] 2. TV [ ] 3. Radio [ ] 4. Dailies [ ] 5. Books/school [ ] 6. Friends [ ] 7. Other [ ]
17	Have you ever heard of any contraceptive methods before? (if No, move to section 3,. Q25)	1. Yes [ ] 2. No [ ]
18	If yes, mention the methods that you know	1. Pills [ ] 2. Injectable [ ] 3. Intrauterine device [ ] 4. Condoms [ ] 5. Diaphragm [ ] 6. Implant [ ] 7. Sterilization [ ] 8 LAM [ ] 9 Emergency [ ] 10 Withdrawal [ ] 11 Periodic Abstinence [ ] 12 Other [ ]
19	Where did you hear of this contraceptive(s) you have mentioned in 19 above?	2. TV/Radio [ ] 3. Dailies [ ] 4. Hospital/clinic [ ] 5. Books/school [ ] 6. Friends [ ] 7. Other [ ]
20	Do you know a place in your community where you can get a modern contraceptive? (if No, move to 22)	1. Yes [ ] 2. No [ ]
21	If yes, where?	1. Hospital/clinic [ ] 2. Pharmacy/Drug store [ ] 3. Health Provider/FP [ ] 4. Friends [ ] 5. Other, specify
22	Do you think that using modern contraceptive during sex provides 100% protection from pregnancy?	1. Yes [ ] 2. No [ ] 3. Don't know [ ]

23	Overall, do you think contraception is a woman's business and a man should not have to worry about it	1. Yes [ ] 2. No [ ]
24	Do you believe women who use contraception may become promiscuous?	1. Yes [ ] 2. No [ ]

Section 3: Use of Contraceptives

25	How do you postpone childbirth?	1. Usage of modern contraceptive method [ ] 2. Traditional Methods [ ] 3 Other, specify [ ]
26	How would you like to space your next childbirth?	1. Usage of modern contraceptive method [ ] 2. Traditional Methods [ ] 3 Other, specify [ ]
27	Have you used any contraceptive before? (If No, move to Q35)	1. Yes [ ] 2. No [ ]
28	If yes, which of the methods have you ever used?	1. Pills [ ] 2. Injectable [ ] 3. Intrauterine device [ ] 4. Condoms [ ] 5. Diaphragm [ ] 6. Implant [ ] 7. Sterilization [ ] 8 LAM [ ] 9 Emergency [ ] 10 Withdrawal [ ] 11 Periodic Abstinence [ ] 12 Other [ ]
29	Which of the methods are you currently using?	1. Pills [ ] 2. Injectable [ ] 3. Intrauterine device [ ] 4. Condoms [ ] 5. Diaphragm [ ] 6. Implant [ ] 7. Sterilization [ ] 8 LAM [ ] 9 Emergency [ ] 10 Withdrawal [ ] 11 Periodic Abstinence [ ] 12 Other [ ]
30	Why did you choose the current one?	1. safe [ ] 2. effective [ ] 3. low side effect [ ] 4. only method known [ ]

		5. only method available [ ] 6. health provider's choice[ ] 7. affordable [ ] 8 convenience [ ] 9 privacy [ ] 10 other [ ]
31	Where do you get this modern contraceptive from?	1. Hospital/clinic [ ] 2. Pharmacy/Drug store [ ] 3. Health Provider/FP [ ] 4. Friends [ ] 5. Other, specify
32	How long have you been using modern contraceptives?	1. One month and above [ ] 2. one to two years [ ] 3. three to five years [ ] 4. 6 years and above [ ]
33	How often do you use any of the methods?	1. Every time [ ] 2. Once a while [ ] 3. Not at all [ ] 4. Don't know [ ]
34	What are your reasons for using modern contraceptives	1. To avoid teenage pregnancy [ ] 2. To prevent STIs [ ] 3. To delay childbirth [ ] 4. To limit childbirth [ ]
35	Who in your opinion should use modern contraceptives?	1. Married couples only [ ] 2. All sexually active persons [ ] 3. Adults only [ ]
36	The last time you had sex did you or your partner use any contraceptive? (if No, move to Q38)	1. Yes [ ] 2. No [ ]
37	Which method of contraceptive did you use? Which type?	1. Pills [ ] 2. Injectable [ ] 3. Intrauterine device [ ] 4. Condoms [ ] 5. Diaphragm [ ] 6. Implant [ ] 7. Sterilization [ ] 8 LAM [ ] 9 Emergency [ ] 10 Withdrawal [ ] 11 Periodic Abstinence [ ] 12 Other [ ]
38	If you wanted to, could you yourself get any modern contraceptives? (if No, move to Section 4, Q40)	1. Yes [ ] 2. No [ ]

39	If yes, which modern could you yourself get?	1. Pills [ ] 2. Injectable [ ] 3. Intrauterine device [ ] 4. Condoms [ ] 5. Diaphragm [ ] 6. Implant [ ] 7. Sterilization [ ] 8 LAM [ ] 9 Emergency [ ] 10 Withdrawal [ ]

Section 4: Factors determining use or Non use

40	The last time you used a contraceptive who decided on what to use?	1. You [ ] 2. Partner [ ] 3. Health Provider [ ] 4. Friend [ ] 5. Other, specify
41	Is there any cultural beliefs and practices that prevent the use of modern contraceptives among lactating mothers in your community? (No, skip to Q43)	1. Yes [ ] 2. No [ ] 3. Don't know [ ]
42	If yes, kindly tell us.	
43	Is there any religious beliefs and practices that prevent the use of modern contraceptives? (No, skip to 45)	1. Yes [ ] 2. No [ ] 3. Don't know [ ]
44	If yes to above, kindly tell us	
45	What will you say are the reasons why lactating mothers do not use contraceptives?	1. Religious beliefs [ ] 2. Distance to acquisition of contraceptives [ ] 3.Attitude of the contraceptive providers [ ] 4.Partner or family members opposed to using [ ] 5. Side effects [ ] 6. Lack of knowledge [ ] 7. Infrequent sex [ ] 8. Hard to get preferred methods [ ] 9.Too costly [ ]

		10.Counselling received about contraceptives [ ] 11.Cultural or traditional beliefs [ ] 12. Other, specify……..