**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,**

**KUMASI, GHANA**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

**DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS**



# CONTRACEPTIVE UPTAKE AMONG POSTPARTUM WOMEN ATTENDING CHILD WELFARE CLINICS IN SUNYANI MUNICIPALITY, GHANA

**BY**

**CAROLINE WUNI**

**NOVEMBER, 2015**

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**A THESIS SUBMITTED TO THE DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS, SCHOOL OF PUBLIC HEALTH, COLLEGE OF HEALTH SCIENCES, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH IN HEALTH SERVICES PLANNING AND MANAGEMENT**

**NOVEMBER, 2015**

## DECLARATION

I hereby do declare that except for references to other people's work which have been duly acknowledged, this piece of work is my own composition and neither in whole nor in part has this work been presented for the award of a degree in this university or elsewhere.

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## ABSTRACT

**Background:** The proportion of Ghanaian women who use modern contraceptives has not been encouraging although knowledge is nearly universal. This study sought to determine the prevalence of, and factors associated with contraceptive uptake among postpartum women attending child welfare clinics in the Sunyani Municipality of Ghana.

**Methods:** Postpartum women attending child welfare clinic (with children 2-24 months) in six selected health facilities in the Municipality were selected and individually interviewed. The number of women from each facility was estimated using probability proportional to size. Respondents were selected for interview using systematic random sampling. Data analysis was done in Stata. To examine the factors associated with contraceptive uptake, crude and adjusted relative risks (RRs) with corresponding 95% confidence intervals (CIs) were calculated using univariable and multivariable binomial regression with a log-link function.

**Results:** A total of 590 women were recruited into the study. The contraceptive prevalence rate (CPR) among currently married postpartum women attending child welfare clinic in Sunyani Municipality was 57.6%, representing the highest reported CPR (among postpartum women) yet in Ghana. Calendar method (28.4%) was the most widely patronised method, followed by the injectables, (18.6%) and then the oral pill (12.5%). Significant determinants of current contraceptive use among postpartum women were previous contraceptive used (adjusted RR, 2.03; 95% C.I., 1.52, 2.71; P= 0.001) and family planning counselling during ANC (adjusted RR, 1.35; 95% C.I., 1.02-1.79; P=0.03). Respondents' future family planning intensions were found to be

largely driven by the desire to space children (adjusted RR, 1.28; 95% C.I., 0.99-1.65; p=0.05).

**Conclusion:** Findings of this study therefore provide insights into existing opportunities in repositioning family planning education, especially among postpartum mothers in the Sunyani Municipality.

## TABLE OF CONTENT

## LIST OF TABLES

## LIST OF FIGURES

## LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ANC: | Antenatal Care |
| CI: | Confidence Interval |
| CPR: | Contraceptive Prevalence Rate |
| CWC: | Child Welfare Clinic |
| DHS: | Demographic and Health Survey |
| FP: | Family Planning |
| GATHER: | Greet, Ask/Assess, Tell, Help, Explain, Review/ Return visit |
| GDHS: | Ghana Demographic and Health Survey |
| HC: | Health Centre |
| HIV/AIDS: | Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome |
| IUD: | Intra Uterine Device |
| LAM: | Lactational Amenorrhoea Method |
| MCH: | Maternal and Child Health |
| MDG'S: | Millennium Development Goals |
| MICS: | Multiple Indicator Cluster Survey |
| NFHS: | National Family Health Survey |
| PMTCT: | Prevention of Mother to Child Transmission |
| PNC: | Postnatal Care |
| PPFP: | Postpartum Family Planning |
| REDI: | Rapport building, Exploration, Decision making, Implementing the decision. |
| RR: | Relative Risk |
| STI: | Sexually Transmitted Diseases |
| TFR: | Total Fertility Rate |
| WHO: | World Health Organisation |

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## DEDICATION

This work is specially dedicated to my dear husband Mr Omar Seidu, my lovely children Weppea, Wunimi and Wuntima and my parents Mrs Matilda Fati Wuni and the late Mr Edwin K. Wuni for their love, support and inspiration.

# CHAPTER ONE

# 1.0 INTRODUCTION

## 1.1 Background to Study

Population change in any country is affected by fertility, mortality and migration. In developing countries, the rapid population growth is attributed to high levels of fertility. For several decades governments and other stakeholders have adopted policies aimed at reducing fertility as part of a whole process of economic development (Rossier and Hellen, 2013). The Government of Ghana initiated its first National Population Policy in 1969 to manage population resources in a manner consistent with the government's ultimate objective of accelerating the rate of economic development and improve the quality of life of the people. After 25 years, population growth still remained unacceptably high and so the Population Policy was revised in 1994 to include a systematic integration of population in development planning with renewed emphasis on fertility reduction to accelerate economic modernisation, sustainable development, and poverty eradication (Ghana National Population Council, 1994). Since then, Ghana has made substantial progress in reducing fertility. Modern contraception has proven perhaps as the most effective method for fertility reduction.

In Ghana, as in many other developing countries, women in the reproductive age group 15-49 years are encouraged to use one form of contraception or other forms of child spacing and birth control methods. The right to contraceptive choice, as an essential component of reproductive and sexual right, has been endorsed by many countries including Ghana, (Ghana Statistical Service et al., 2009). According to

Rossier and Hellen (2013) the choice therefore to adopt any family planning (FP) method rests with the couples or individual woman.

Pregnancy and child birth changes a woman's priorities, attitudes, lifestyle, sex behaviour, the decision for contraceptive uptake, and the preferred contraceptive method. Effective contraception can prevent unintended pregnancy and ensure adequate birth spacing (Yilmazel and Balci, 2013).

Research has shown that short birth intervals are closely associated with poor health of children, especially during infancy. Children born too close to a previous birth, especially if the interval between the births is less than two years, are at increased risk of morbidity and mortality. Longer birth intervals, on the other hand, contribute to the improved health status of both mother and child. This therefore underscores the importance of the postpartum period (Rossier and Hellen, 2013). This period of postpartum non-susceptibility has been singled out as an important "proximate determinant" in inhibiting the number of children in high fertility populations (Bongaarts and Potter, 1983). In such settings, women who recently gave birth are protected from new pregnancies by long periods of breastfeeding, inducing prolonged amenorrhea and the use of modern contraception (Ghana Statistical Service et al., 2009). Delaying the resumption of postpartum sexual relations can also prolong protection. Studies abound have attempted to determine factors influencing the use of modern contraception in developing countries and Ghana in particular. Many of the studies focus on the socio-economic, cultural and physical barriers women have to overcome in order to adopt a method of contraception. However, less attention has been paid to FP uptake among postpartum women. Besides fertility reduction through child spacing and limiting, FP among postpartum women has the added advantage of

reducing both maternal and infant mortality. Therefore, the need to explore this area of FP cannot be overemphasized.

## 1.2 Problem Statement

The demographic impact of contraceptive use depends not only on its prevalence but also on the duration and effectiveness of use. The proportion of Ghanaian women who use modern contraceptives has not been encouraging although knowledge is nearly universal (Ghana Statistical Service et al., 2009). The use of modern contraceptives was reported as 23.3% of currently married women in the reproductive age 15- 49 years (Ghana Statistical Service, 2012). The prevalence rate has over the last two decades not experienced much improvement and that has been a source of worry to FP experts in the country.

One of the main aims of the Millennium Development Goals (MDG's) is to reduce maternal and infant mortality by three quarters between 1990 and 2015. To achieve this target, interventions such as the promotion of FP among postpartum women is emphasized. Data from Demographic and Health Survey (DHS) in 27 countries suggest that less than 35% of women who want to avoid pregnancy during the postpartum period use any form of contraceptive. It has been estimated that, postpartum family planning (PPFP) can prevent about 30% of maternal mortality and 10% of child mortality (Elliason et al., 2013).

Overall, contraceptive use among married women in Ghana has nearly doubled in the past 20 years (Ghana Statistical Service et al., 2009). Survey results indicate there was a large increase in contraceptive use in the late 1980s and 1990s, from 13% to 22% among married women. However, over the past ten years, increases have been small (Ghana Statistical Service et al., 2009). The contraceptive prevalence rate increased

from 22% among currently married women in 1998 to 25% in 2003, it slightly declined to 24% in 2008 (Ghana Statistical Service et al., 2009). The 2011 Multiple Indicator Survey (MICS) recorded a contraceptive prevalence rate of 35% of currently married women. Similarly, use of modern methods nearly doubled from 10% in 1993 to 19% in 2003, before declining slightly to 17% in 2008 (Ghana Statistical Service, 2012).

In the same publication the Ghana Statistical service reported that the rate has witnessed a six percent increase in the last five years reaching 23% in 2011. The results from these surveys suggest that not much gain have been made since the 1990s and we are therefore not likely to achieve the targets set in the revised National Population Policy of 1994.

According to the 2008 Ghana Demographic and Health Survey (GDHS), the median duration of postpartum amenorrhoea in Ghana is nine months; the median duration of post-partum abstinence is slightly lower at eight months. Ninety-six percent of women who gave birth in the two months preceding the survey were still abstaining from sex at the time of the survey. The proportion of women abstaining decreases with increasing months since delivery, particularly during the first year after a birth. Almost all women are insusceptible to the risk of pregnancy during the first two months after a birth because of post-partum amenorrhea and post-partum abstinence (Ghana Statistical Service et al., 2009).

In 1989, the FP community accepted the "lactational amenorrhoea method (LAM)" as a means of pregnancy prevention (through the Bellagio consensus statement): exclusive breastfeeding can serve as a contraceptive method during the first six months after birth for amenorrhoeaic women (Trussell and Santow, 1991). This

method has been successfully piloted in several countries (World Health Organisation, 1999). However, there is no evidence to date that any national FP programme is effectively using it at a large scale in sub-Saharan Africa (Brown, 2007).This may partly be due to the fact that individual women are still at risk of becoming pregnant when amenorrhoeic since ovulation precedes the return of menses. The need therefore to encourage postpartum women to take up FP methods for spacing and limiting child birth with it consequent benefit of protecting the mother and the new born cannot be overemphasized.



Indeed, Elliason et al. (2013) indicated that the postpartum period remains neglected in FP research in Ghana as very little research has focused on FP needs of women during this period. This study therefore seeks to assess the prevalence and factors associated with uptake of FP by postpartum women in the Sunyani Municipality among others, provide FP practitioners reasons to reposition FP education among this group in the Sunyani Municipality.

### 1.3 Justification for Study

The high rate of unintended pregnancy is said to be driving population, especially in sub-Sahara Africa where approximately one half of all pregnancies are reported to have come soon or were unwanted (World Health Organisation, 2012). These could have been prevented with increased access to effective FP / contraceptive methods. According to Singh and Darroch (2012), in the developing world, an estimated 222 million women have unmet need for modern contraception. It has been realised that, women in their first year after birth have the highest unmet need for contraception as more than two-thirds of these women want to delay their next birth but are not using contraceptive method (Borda et al., 2011; Ross and Winfery, 2001). Studying contraceptive uptake in the postpartum period is important, especially in Ghana where

the use of modern contraception is still very low. Almost all women are insusceptible to the risk of pregnancy during the first two months after a birth because of post-partum amenorrhoea and post-partum abstinence. At eight to nine months after a birth, about half of women are still amenorrhoeic but only 41% are abstaining (Ghana Statistical Service et al., 2009). This shows that 60% of these women in the country risk getting pregnant if they do not take up any form of contraception. The postpartum period is an important intervention for improving access to FP service. This is because postpartum women have high need for contraception and moreover since they have multiple contacts with the health facility either for postnatal care or child welfare clinic services. The need therefore to study the contraceptive uptake among postpartum women in the Sunyani Municipality will to a large extent provide the basis to assess progress made so far and decide on the way forward.



## 1.4 Research Questions

1. What is the prevalence of contraceptive uptake among postpartum women in the sunyani municipality?
2. What contraceptive methods are mostly used by postpartum women in the Sunyani Municipality?
3. What factors would facilitate or discourage contraceptive uptake among postpartum women in the Sunyani Municipality?

## 1.5 Objectives of the Study

### 1.5.1 Main Objective

To determine the prevalence of and factors associated with contraceptive uptake among postpartum women attending child welfare clinic in Sunyani Municipality.

### 1.5.2 Specific Objectives

1. To determine the prevalence of contraceptive uptake among postpartum women attending child welfare clinic in Sunyani Municipality.
2. To determine the contraceptive methods used by postpartum women.
3. To determine factors associated with contraceptive uptake among postpartum women in Sunyani Municipality.

## 1.6 Hypothesis



The uptake of postpartum contraceptives among women attending child welfare clinic in Sunyani Municipality is likely to be between 39% and 53% (Morhe and Dalton, 2013; Morhe and Ankobea, 2011). Significant factors influencing the uptake are likely to be:

level of education (tertiary), antenatal FP counselling and postnatal FP counselling (Ekabua et al., 2010).

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

### Introduction

This chapter reviews the literature on what has been done in the area of postpartum FP. The review critically examines both qualitative and quantitative research done in both developed and developing countries and pays particular attention to contraceptive knowledge and prior use; prevalence of contraceptive uptake, contraceptive methods used, and factors associated with contraceptive uptake among postpartum women.

### 2.1 Family Planning / Contraception

FP is defined by World Health Organisation (2013) as the ability for individuals and couples to attain their desired number of children and plan the spacing and timing of their births through use of contraceptive methods. FP has many benefits for women and families as well as public health, economic and environmental benefits at the population level which has been recognised worldwide. The health benefits for women and infants includes the prevention of pregnancy related health risk and deaths in women, reduction in infant mortality and rate of unsafe abortion, the prevention of HIV/AIDS transmission from mother to child (PMTCT) and prevention of HIV transmission and other sexually transmitted infections (STI's) between partners (World Health Organisation, 2013).

Despite the known benefits of FP, over 120 million women in the reproductive age who are married or in union have unmet need for FP globally (United Nations, 2011). Studies conducted by Uganda Bureau of Statistics and IFC International (2012) indicated that, unmet need for FP refers to women capable of producing who are not

using contraceptives but wish to postpone their next birth or stop childbearing altogether. In a similar study conducted by the Guttmacher Institute and United Nations Population Funds (2010), meeting the unmet need for FP, maternal and new born health care in sub-Saharan Africa is estimated to result in 69% reduction in maternal death and 57% drop in new born deaths. Research has shown that FP has significant economic benefits for families and society as a whole (Gribble, 2012). Women have more earning potentials and families are able to devote more resources to each child resulting in reduction of poverty by slowing the growth of a population (Gribble, 2012; United Nations Population Division, 2005). Planning the spacing of births is critical; intervals shorter than 36 months are associated with increased risk of neonatal and infant mortality, child malnutrition and complications during pregnancy (Gribble et al., 2008; Rutstein, 2008). Studies by Singh et al. (2006) estimated nearly four in ten (38%) unintended pregnancies result in abortion. This is not good for women's health and could have been prevented by using contraceptives. One way to increase FP access and uptake is by integrating it with maternal and child health (MCH) services. These points include antenatal care delivery, postnatal care and child welfare clinics (Speizer et al., 2013).

## 2.2 Postpartum family planning (PPFP)

Many a time some postpartum women are caught up with unintended pregnancy some of which are unplanned and may result in unsafe abortions. As a result reproductive health practioners who are faced with this major challenge see that increasing contraceptive uptake will reduce the rate of unintended pregnancies.

The first year after delivery is a complex period, during which a woman has to care for her new born child as well as cope with a series of emotional and physical changes and often extreme tiredness (Salway and Nurani, 1998). This postpartum period

presents a rising risk of unwanted conception and often frustrated desire for contraceptive protection (Depineres et al., 2005; Ross and Winfery, 2001). Although contraception demands fluctuates over the course of a woman's reproductive life, postpartum period is an important timing for FP, which lengthened birth spacing and improves maternal and infant health (Barber, 2007).

This period of postpartum non-susceptibility (first year after delivery) has been singled out as an important "proximate determinant" in inhibiting the number of children in high fertility populations (Bongaarts and Potter, 1983). In such settings, women who recently gave birth are protected from new pregnancies by long periods of breastfeeding, inducing prolonged amenorrhea. Delaying the resumption of postpartum sexual relations can also prolong protection (Ghana Statistical Service et al., 2009). Postpartum family planning, therefore is the initiation and use of contraceptives during the first year after delivery and thus reduces lifetime risk of maternal mortality by preventing exposure to pregnancy (McKaig and Deller (2006) .

In sub-Saharan African countries most women and couples use traditional postpartum practices (lactational amenorrhoea, abstinence and coitus interuptus), which protect them, and some even then transit to contraception (Brown, 2007). Studying this transition is important, especially in settings where the uptake of contraception is still low, and where traditional postpartum practices are receding, like in urban West Africa (Rossier and Hellen, 2013). A full understanding of this transition from traditional protection to contraception will ultimately help to promote FP in these settings, and reduce the number of closely spaced pregnancies, which have heavy consequences for vulnerable women and children. Research has established that many postpartum women have high unmet need for FP during the first year after delivery and that most of the unmet need is for spacing and limiting birth. Analysis of

Demographic and Health Survey (DHS) of 27 countries conducted by Ross and Winfery (2001) revealed an estimated 74% unmet need of contraception during the first year in sub-Saharan Africa as compared to 54% in Latin America and 62% in Asia. The analysis also indicated that only 18% of postpartum women in sub-Saharan Africa are using contraceptives as compared to 42% in Latin America and 32% in Asia. In Kenya, Nigeria and India, the unmet need for PPFP is alarmingly high at 68%, 62% and 73% respectively, and only one fifth of the postpartum mothers use FP during the first year after birth (Borda, 2008; Borda and Winfery, 2006a; Borda and Winfery, 2006b).



## 2.3 Intention to use PPFP

Whereas there is extensive literature on unmet need for PPFP and postpartum period, not much has been documented about women's intention to use a contraceptive method during the postpartum period. Yet, according to Roy et al. (2003), intention to practice contraception is a more valid indicator of the demand for FP than unmet need, even after adjustment for women who state that they will use contraceptives but might fail to do so.

In addition, Ross and Winfery (2001) observed that while unmet need rests on fertility references, statements of intentions to use contraceptives pertains to actual contraceptive use. This means that by expressing intention to practice contraception, women are able to better visualize their future need for FP and therefore are more likely to translate it into actual use. Consequently, women's statements about their intentions to use contraceptives have recently received attention as an alternative or supplement to information about unmet need (Roy et al., 2003).

A follow up study conducted five years after national family health survey (NFHS) in India revealed that 49% of the women who had stated their intention to use contraception actually did use it, compared with more than 29% of the women who did not intend to use contraceptives (Roy et al., 2003). The study also reported that women who intended to use a contraceptive method and had no intentions of having a child one year after birth were significantly more likely than others to use a method. Analysis of the demographic and health surveys data of 27 countries by Ross and Winfery (2001) also reported that where the stated intention to use contraception was high, there was substantial rise in the actual contraceptive use. However, it is important to remember that childbearing intentions and behaviour are dynamic concepts that depend on a number of factors. Roy et al. (2003) reported that women may not adhere to their intentions of contraceptive use within the first year postpartum because of sudden death of the infant, change in economic conditions of the household, opposition from family members including spouses as well as lack of good quality FP services.

## 2.4 Prevalence of postpartum family planning

Uptake of modern FP methods remains low in sub- Saharan Africa and this is associated with high incidence of unwanted pregnancies, unsafe abortions, unplanned deliveries and maternal mortalities (Crossette, 2005).

Namazzi (2013) study on missed opportunities for modern FP service among women attending child welfare clinic in Iganga/ Mayuge (Uganda) indicated a prevalence rate of 27% (100 respondents) of which 84% of them were using modern contraceptives whilst 15% practiced the traditional methods.

It has been noticed that, postpartum contraceptives prevalence seems to be generally low in several countries and Ghana is no exception. Studies abound indicate that, uptake of contraceptives is still low despite efforts made by reproductive health practioners. A Senegal study by Speizer et al. (2013) found a 36% contraceptive uptake among women in the 18-23 months postpartum window. They however contend that this uptake is low given that 69% of women who are postpartum within 2years want to wait another 2years or more before having another child. Similarly Barber (2007) conducted a study using 2,238 urban low income postpartum women from 17 Mexican states on FP advice and postpartum contraceptives use and came out with a postpartum prevalence rate of 47%. The study indicated that women who received FP advice during prenatal care were more likely to use contraceptive than were those who didn't receive such advice (odd ratio (OR) 2.2). Moreover those who received the advice had a higher probability of using condoms (relative risk (RR) 2.3), IUD (5.4) and sterilization (1.4). Research by Ekabua et al. (2010) in Nigeria showed a postpartum contraceptive prevalence rate of 23.4% from a sample size of 256 women. Another recent study by Anzaku and Mikah (2014) in Nigeria on postpartum resumption of sexual activity, sexual morbidity and use of modern contraceptives also revealed a contraceptive prevalence rate of 19.1% (44/230) out of 67.6% among women who were sexually active including those that had commenced menstruation. A similar study conducted in Ghana by Morhe and Dalton (2013) among 456 postpartum women attending child welfare clinic at Komfo Anokye Teaching Hospital indicated the prevalence of postpartum contraceptive uptake of 38.8%. In another study by (Morhe and Ankobea, 2011) the prevalence of contraceptive uptake among 887 postpartum women was 53%.

## 2.5 Contraceptive methods used by women during the postpartum period

Women in the reproductive age who use contraceptives to prevent or delay pregnancy chose a method or methods among the various methods available. Choice of method may be due to its availability or preference. Several researches have been done in the area of contraceptive methods used by women during the postpartum period.

Some commonly contraceptives used by postpartum women are injectable (37%), condoms (24%) (Namazzi, 2013).

In a cross sectional survey conducted by Marthe et al. (2011), it indicated that majority of postpartum women used traditional methods (65%), mostly calendar method (72%) in the past and 63% before the current pregnancy.

Studies conducted by Anzaku and Mikah (2014) revealed a contraceptive prevalence of 19.1% of which the methods used were condoms 31.8%, intra-uterine contraceptive device 31.8%, long acting injectables (27.3%) and sub-dermal implants 9.1%. In a study by Morhe and Dalton (2013) effective contraceptives method included depo provera, female sterilization and sub- dermal implants. According to Ekabua et al. (2010), the commonest methods of contraceptives used in their study were the condom (5.5%), IUD (4.7%), mini pill and implant (3.1%) each, abstinence in the first six months 1.6%, LAM and sterilization (0.8%) each.

## 2.6 Factors associated with contraceptive uptake among postpartum Women

According to Ekabua et al. (2010) factors associated with decreased contraceptive uptake includes; extremes of reproductive age, unmarried status, low educational attainment, low parity, uncertain reproductive goal and Christian religion. The main reasons for non-contraceptive use were personal objection, lack of awareness and

spousal permission. Whilst those who had higher education (tertiary), antenatal and postnatal counselling were more likely to use contraceptives.

The following are some of the factors likely to influence contraceptive uptake by some studies.

1. **Contraceptive knowledge and prior use**

Contraceptive knowledge and prior use influence a woman's decision to use contraception. Contraceptive knowledge empowers a woman to make informed choices and past experience is important in influencing future decisions on contraceptives use.

2. **Contraceptive knowledge**

The adequate knowledge on PPFP empowers the postnatal woman to make a choice on the method and the appropriate initiation timing (King, 2007). A study done in Mexico by Barber (2007) suggested that even when populations have access to services, it is important for health care providers to offer advice about available modern methods to offset fears about negative side effects and allow for full informed choices.

Vernon (2008), identified that women's preference on beginning contraception is influenced by their knowledge on PPFP and thus observed that women who are uncertain or do not know what method to use are more likely to start using contraceptives at six months postpartum or later. Studies conducted in Kenya and South Africa observed an increased utilization of PPFP following interventions to increase awareness (Mwangi et al., 2008; Hani et al., 2003). Therefore increasing the information provided on the methods available following delivery has a strong influence on women's decisions to use postpartum family planning.

On the contrary, a study conducted by Newmann et al. (2005) using a sample of adolescent first time mothers revealed that contraceptive knowledge did not predict prior or future contraceptive use. They observed that higher educational level predicted greater contraceptive knowledge but not contraceptive use. A study in Democratic Republic of Congo by Marthe et al. (2011) indicated that, 41% of postpartum women did not use FP method (in the past) and 37% before current pregnancy due to lack of knowledge.



**3. Prior contraceptive use**

According to Ashford (2003) postpartum women who have used contraceptives in the past and intend to use them in the future are more likely to use contraceptives than those who have not used contraceptives in the past. The women who have not used contraceptives in the past and intend to use in the future, are motivated but are also likely to face challenges and obstacles than prior users. A study done in Iran revealed that prior contraceptive use was a significant factor influencing contraceptive use (Tehrani et al., 2001).

**4. Prenatal contraceptive counselling**

Global strategies have used prenatal care as an entry point in the delivery of reproductive health including FP, (Arrowsmith et al., 2014; Barber, 2007; Glasier et al., 1996). This is because prenatal services offer an opportunity to reach women who would be the primary target of FP services in the postpartum period.

According to Day et al. (2008) prenatal period increases provider-patient interaction and offers multiple opportunities for FP discussion and education. Therefore prenatal care provides opportunity to discuss pros and cons of each contraceptive option;

which helps the woman make informed decision on the most appropriate choice to adopt after birth (King, 2007).

Studies reveal that women who receive FP advice during prenatal care were more likely to use a contraceptive than those who did not receive such advice and concluded that antenatal period provided a golden opportunity to discuss not only the appropriateness of the chosen contraceptive method but also its correct use. However, this opportunity is under- utilized as a result of patient and provider characteristics (Barber, 2007; Depineres et al., 2005; Ross and Winfery, 2001). Barber, (2007) and Day et al., (2008) demonstrated that the number of prenatal visits predicted PPFP use, as indicated by increase in odds with each additional visit and concluded that high number of prenatal visits increase exposure to contraceptive counselling and willingness to accept advice that influences uptake.

On the contrary, a randomized prospective study conducted in antenatal clinics in China, Scotland and South Africa in which women were given information about contraception during antenatal visits while others were not; found no significance difference in the subsequent contraceptive use in the postpartum period (Smith et al., 2002).

**5. Postpartum pregnancy risk perception**

The year after a woman gives birth presents a rising risk of unwanted conception and often frustrated desire for contraceptive protection (Arrowsmith et al., 2014; Depineres et al., 2005; King, 2007). Researchers have established that drop in breastfeeding, return of menses and resumption of sexual activity influences return of fertility beginning approximately 3-6 months and thereby increasing the risk of pregnancy among women during the first year postpartum period.

Analysis of DHS in Kenya, Nigeria and India demonstrated a sharp decline in breastfeeding between 3-6 months after birth, even though over 80% of mothers initiated breastfeeding after birth. Resumption of sexual activity begins during the first quarter, on average 6 weeks in the first year postpartum and increases gradually throughout the year. About two thirds of postpartum mothers had resumed sexual activity in the first three months postpartum and by the end of first year after birth over 80% were sexually active. Return of menses is highly individualistic and increases gradually over the first year postpartum period. Previous studies have indicated that by the end of first year after birth, about 40% to 50% of postpartum women in sub-Saharan Africa and Asia experience return of menses by one year postpartum (Borda, 2008; Borda and Winfery, 2006a; Borda and Winfery, 2006b; Ross and Winfery, 2001). Yet a number of studies have revealed that most of the postpartum mothers are not aware of the factors associated with fertility return and do not think they are at risk of pregnancy during the first year after giving birth. Consequently, these mothers are reluctant to use family planning or are using unreliable methods associated with high failure rate such as withdrawal and condom (Glasier et al., 1996; Rojnik et al., 1995; Salway and Nurani, 1998; Shaaban and Glasier, 2008).

In their study Return to Menses and PPFP Use in Ghana, India, Rwanda and Zambia, Aurelie Brunie of FHI 360 summarizes their findings thus data from four of the studies (3 different countries), 4 to 48% of women did not know that a woman could get pregnant before her menses returned during the postpartum period. But even those women who did understand their pregnancy risk did not necessarily act on this knowledge. In the Ghana and Zambia integration studies, among women 9-12 months postpartum (when pregnancy risk is higher than in earlier postpartum months),

knowledge of pregnancy risk was not associated with FP use among sexually active, amenorrheic women. Also, women who were aware of pregnancy risk were as likely to cite waiting return of menses as a reason for non-use as were women who were not aware of this risk (Family Health International 360, 2012).

**6. Demographic and socio-economic characteristics of postpartum mothers**

Several studies have established a significant association between PPFP and postpartum mothers' demographic and socioeconomic factors. Older, married, educated and working mothers are more likely to adopt PPFP than the younger, single, less educated and those from disadvantaged backgrounds (Kariuki et al., 2011).

**7. Marital Status**

Marriage is an indication of regular exposure of women to risk of pregnancy, therefore early marriages increases the risk of childbearing at an early age (Kamal, 2009; Kenya National Bureau of Statistics and ICF Macro, 2010). Studies have shown that young couples adopt unreliable contraceptive methods such as withdrawal which are associated with high failure rates (Shaaban and Glasier, 2008).

A prospective study done in Shanghai on newly married couples revealed that most young couples aged less than 28 years old used unreliable FP methods which resulted in high rate of repeated pregnancy in the extended postpartum period after their first birth (Ross and Winfery, 2004). However, a descriptive study done in El Salvador by Newmann et al. (2005) revealed that young postpartum women living with a partner were more likely to use contraceptives than those living without a partner.

### 8. Level of education

Studies have revealed that postpartum women with higher education are more likely to use reliable contraceptive regularly (Rojnik et al., 1995; Tehrani et al., 2001). According to (Atuyambe et al., 2008; Kamal, 2009), most of the first time mothers younger than 19 years old are more likely to have dropped out of school than those aged 20 years and above. However, Newmann et al. (2005) observed that educational level predicted contraceptive knowledge but did not predict contraceptive use or intention to use among postpartum young mothers. This implies that education is an important determinant of contraceptive knowledge and probably its use but not age of mother.

### 9. Employment Status

Employment status of women influences their decision to use family planning methods. A study done in China revealed that working first time mothers are more likely to use postpartum contraception than non-working mothers (Ross and Winfery, 2004).

# CHAPTER THREE

# 3.0 RESEARCH METHODOLOGY

## Introduction

This chapter presents the design that was adopted to achieve the study objectives. It also provides information on the study site, study population, study sample, data collection procedures and data analysis. Ethical considerations, expected outcomes and study limitations are also presented.



## 3.1 Study Method and Design

This is an analytical cross sectional study conducted from 2nd to 30th July, 2014. Data was collected from a section of postpartum women in selected health facilities at a single point in time with a pretested structured questionnaire. The women were not followed-up subsequently by the research team. This was feasible within the time frame and a cost effective method of assessing contraceptive uptake among postpartum women attending child welfare clinics in the Municipality.

## 3.2 Profile of Study Area

The study was carried out in the Sunyani Municipality. It is one of the 27 districts of the Brong Ahafo Region and is the regional capital. It was created on 10th March, 1989 by legislative instrument 1473 when Ghana adopted the District Assembly concept. The Municipality was re-demarcated in 2007 when the Sunyani West District was carved out of the then Sunyani District. Sunyani Municipality is located at the heart of Brong Ahafo Region and lies between Latitudes $7^0$ 20'N and $7^0$ 05'N and Longitudes $2^0$ 30'W and $2^0$10'W. It shares boundaries with Sunyani West District to the North, Dormaa East District to the West, Asutifi District to the South and Tano

North District to the East. The Municipality has a total land area of 506.7 $km^2$ with a population density of 243 persons per square kilometer.

The Sunyani Municipality is home to a total population of 123,224 made up of 61,610 males and 61,614 females. The Municipality is predominantly urban with more than eight out of every 10 persons (83.1%) living in an urban area. Also it is the only district in the Brong Ahafo Region with less than a third (31.7%) of its population below 15 years. The Municipality recorded a total fertility rate (TFR) of 2.61 in the 2010 Population and Housing Census, which is lower than the regional average of 3.58 and a national average of 3.28. These show a decline in TFR compared with the 2008 GDHS TFR of 4.1 and 4.0 for the region and the country respectively. The Sunyani Municipal has the highest literacy rate in Brong Ahafo with slightly more literate males (89.2%) than their female counterparts (82.5%). Despite the diversity in ethnicity and religion, inhabitants of the Municipality live in peace and harmony (Ghana Statistical Service, 2013). The Municipality has three (3) hospitals, eighteen (18) clinics, twenty eight (28) chips compounds, fifteen (15) maternity homes and three (3) health centres spread across. Table 3.1 below shows some of the facilities. The map of the Municipality is also shown in the appendix.

**Table 3.1: Distribution of some health facilities providing maternal and child services in the Sunyani Municipal**

| HEALTH FACILITY | SERVICES RENDERED | | | |
|---|---|---|---|---|
| | ANC | PNC | CWC | FP |
| Municipal hospital | | | | |
| Municipal health directorate | | | | |
| Regional hospital | | | | |
| S.D.A. hospital | | | | |
| Florence maternity home | | | | |
| Methodist health centre | | | | |
| Greenhill clinic | | | | |
| Rafchik clinic | | | | |
| Opoku clinic | | | | |
| Abesim health centre | | | | |
| Monica's maternity home | | | | |
| Owusu memorial clinic | | | | |
| Kenam clinic | | | | |
| Bakoniaba CHPS | | | | |
| Penkuase CHPS | | | | |
| Nkwabeng north CHPS | | | | |
| Nkwabeng south CHPS | | | | |
| 3MRS | | | | |
| Magazine CHPS | | | | |

Services rendered are shown in colour.

### 3.3 Study Population

The study population comprised of all mothers who attended child welfare clinics at the selected health facilities within the study period. The eligibility criteria included all mothers attending child welfare clinics who had given birth in the 24 months prior to the study and were more than six weeks postpartum. This was informed by the fact that according to the 2008 DHS only 2.6% of women reported to have been amenorrheoic 24 to 25 months after a birth in the three years preceding the survey (Ghana Statistical Service et al., 2009). Also, mothers would usually not begin child welfare clinics until after six weeks (usually taken as 40 days) of child birth.

Therefore all mothers attending child welfare clinics before six weeks after birth were excluded from the study during the data collection period whether they used family planning methods or not. More so, mothers whose children were older than 24 months would not provide information that would be useful in achieving the study objectives, hence they were excluded.

**Inclusion criteria**

1. All mothers attending child welfare clinics who had given birth in the last 24 months and were more than six weeks postpartum.
2. Women who gave consent to participate in the study.

**The exclusion criteria**

1. Mothers whose children were less than 6weeks old.
2. Mothers attending child welfare clinics whose children were older than 24 months.
3. Women who declined consent to participate in the study.

### 3.4 Study Procedures

All eligible mothers were approached individually by a trained research assistant who explained the purpose of the study to them.

After consent was sought from the selected participants, those who consented to participate in the study were enrolled and underwent a confidential interview in Twi or English using the pretested questionnaire. In the case of minors (girls below 18 years of age), informed consent was obtained from the parent (mother or spouse) who accompanied them to the clinic upon participants approval.

Information was collected on their demographic characteristics, contraceptive utilization, barriers and factors of contraceptive uptake.

### 3.5 Sampling of Facilities

The Municipality was purposively selected due to the fact that it is the most urbanized in the region and that the Municipal Health Directorate is interested in the outcome of this study as part of a programme to reposition FP education in the Municipality. Six health facilities offering child welfare clinic services and FP were purposively selected due to the fact that their catchment areas cover virtually all the settlements (sub-districts) and represent public and private health facilities in the Municipality. These are the Regional Hospital, Sunyani Municipal Hospital, Sunyani SDA Hospital, Abessim Health Centre, Monica's Maternity Home, and Florence Maternity Home.

### 3.6 Study sample and sample size

The study included all eligible women attending child welfare clinic at the six selected health facilities in the Municipality. Data collected from child welfare clinics of the six facilities showed an average of 3,040 attendants per month. Discussions with the welfare clinic in-charges suggested that over 80% of children who attended

the clinic were between 0 – 24 months and they were brought in by their biological mothers.

### 3.6.1 Sample size justification

Sample size calculations were done using Epi Info version 7.1.1.14 (Center for Disease Control and Prevention (CDC); Atlanta USA). Assuming that the factors influencing postpartum contraceptive uptake among women attending child welfare clinic in Sunyani are similar to those observed by Ekabua et al. (2010) in Nigeria viz; level of education (tertiary) (OR – 1.85), Antenatal FP counselling (OR – 3.45) and postnatal FP counselling (OR – 5.56). A sample size of 536 was considered to have adequate power to detect these factors (refer to Table 3.2).

**Table 3.2: Sample size calculation**

| Factors influencing contraceptive uptake among postpartum women | Percentage (%) | Odds ratio (OR) | Estimated sample size |
|---|---|---|---|
| Tertiary education | 27.8 | 1.85 | 536 |
| Antenatal family planning counselling | 32.4 | 3.45 | 155 |
| Postnatal family planning counselling | 36.9 | 5.56 | 87 |

A non-response rate of 10% was assumed to cater for respondent refusal, which therefore increased the sample size to 590. This will give a more than 80% power to detect proportions of the various factors. The requisite numbers of participants were recruited within a period of one month in each facility.

### 3.6.2 Sample Size Allocation

The expected numbers of clients recruited from each facility were estimated using probability proportional to size; Table 3.3 below shows the allocation of the study sample.

**Table 3.3: Sample Size Allocation**

| Facility | Child welfare clinic attendance(march 2014) | Percent (%) of total attendance | Sample allocation |
|---|---|---|---|
| Regional Hospital | 702 | 23.1 | 136 |
| Municipal Health Directorate CWC | 1131 | 37.2 | 220 |
| SDA Hospital | 511 | 16.8 | 99 |
| Abessim Health Centre | 246 | 8.1 | 48 |
| Monica's Maternity Home | 170 | 5.6 | 33 |
| Florence Maternity Home | 280 | 9.2 | 54 |
| Total | 3040 | 100 | 590 |

Source: (Sunyani Municipal Health Directorate, 2014); (Sunyani Regional Hospital, 2014)



### 3.7 Data Collection Instrument and Procedure

Primary data was collected from the postpartum mothers by face-to-face interviews using structured questionnaires. The interviews were conducted in Twi or English, which are the languages commonly spoken in the Municipality. The choice of either language was dependent on the respondent's preference. The questionnaire had a combination of open and closed ended questions measuring demographic characteristics, socioeconomic factors, pregnancy risk perception, contraceptive knowledge and prior use, prenatal contraceptive counselling, use and intention to use PPFP.

Ten research assistants were recruited and trained for the data collection with the researcher serving as a supervisor. The assistants were trained on the administration of the questionnaire to ensure similar understanding of the questions using both English and Twi. The respondents' inclusion criterion was emphasized to avoid bias.

The data collection took a period of four weeks with an average of 148 interviews per week. The child welfare clinics for the facilities do not fall on the same days and in some cases clinics were held twice per week. The job allocation was such that each research assistant completed about 15 questionnaires per week. This was to ensure that respondents were not unduly delayed at the facility to encourage maximum cooperation.

### 3.7.1 Pre-testing



Pretesting of the questionnaire was done at Rafchik Hospital and Fiapre Health Centre two weeks before the start of actual data collection to assess reliability and validity of the questionnaire and other survey processes. A five percent sub sample was taken for the pre-test. The pre-test data was quickly analysed and the feedback used to adjust the final questionnaire. This afforded the researcher the opportunity to assess the workload and adequacy of time allocated for the interviews.

### 3.7.2 Sampling of respondents

The number of participants from each facility was selected using probability proportional to size and participants chosen by systematic random sampling. First, all women attending the child welfare clinic whose biological children were between six weeks and 24 months were identified and counted at each visit.

The sampling fraction (1/x) was obtained by dividing the number of participants by the total number of eligible respondents in the chosen facility. The first case (y) was selected by simple random sampling and the rest of the participants obtained by y+x, y+2x, y+3x….. Questionnaires were administered to only women who consented to taking part in the study. If a client declined consent or was not available then the next client was chosen

### 3.8 Study Variables

#### 3.8.1 Dependent Variable

Current contraceptive use.

#### 3.8.2 Independent Variables

Age of respondent, educational level, marital status, religion, FP counselling during child welfare clinic, partner encouragement, number of ANC visits, prior use of contraception, timing of pregnancy, parity of mother, fear of side effects, discussing family planning with husband, spacing kids, want kids no more, type of previous contraceptive used, type of current contraceptive used and ANC counselling encouraged me to do FP.

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**Table 3.4: Study Variable Table**

| Objective | Dependent Variable | Independent Variables | Conceptual definition of dependent variable | Scale of measurement | Indicators | Data collection method | Type of statistical analysis |
|---|---|---|---|---|---|---|---|
| To determine the prevalence of contraceptive uptake | Current contraceptive use | Age, parity, occupation, marital status, educational level. | Proportion of postpartum mothers on contraception | Nominal, ordinal | Percentages, proportions, frequencies, mean, standard deviation | Questionnaire | Proportion |
| To determine the contraceptive methods used | Current contraceptive use | Age parity, occupation, marital status, educational level, timing of pregnancy. | Preferred contraceptive methods | Nominal, ordinal | Percentages, proportions, frequencies, mode | Questionnaires | Proportion |
| To determine factors associated with contraceptive uptake | current contraceptive use | Age, partner encouragement, ANC visits, timing of last pregnancy, occupation, FP counselling during ANC, educational level, discussing family planning with husband, type of contraceptive method, | Reasons for use or non-use of contraception by postpartum mothers | Nominal, Ordinal | Percentages, frequencies, standard deviation, relative risk, confidence interval | Questionnaires | Generalized linear models |

### 3.9 Data management / Data Handling

Questionnaire editing was done at the end of every interview session and also at the end of each day to assess completeness of the questionnaires. Data coding and data entry were done concurrently with the data collection

### 3.10 Data analysis

Data was double entered into database in Epi info version 7.1.4.0 (Center for Disease Control, Atlanta U.S.A.) cleaned and transferred to Stata Version 11.2 (StataCorp, College Station Texas, USA) for statistical analysis. Data was summarized using descriptive statistics and presented as graphs and tables. Categorical variables were compared using the chi-square ($\chi 2$) or Fisher's exact test as appropriate. To determine the factors associated with contraceptive uptake, crude and adjusted relative risks (RRs) with corresponding 95% confidence intervals (CIs) were calculated using univariable and multivariable binomial regression with a log-link function. Univariable analysis was performed to examine the association of each explanatory variable with current or future contraceptive use and factors which reached statistical significance at $p < 0.1$ were entered into the multivariable model. Factors which remained significant ($p < 0.1$) were included in the final model. Excluded risk factors were retested in the final model one at a time to confirm lack of association. Statistical significance was assessed using the likelihood ratio and Wald tests.

### 3.11 Research approval and ethical consideration

The research was discussed with the Municipal Health Directorate and the facility heads who endorsed the study and gave permission to conduct the research at the selected health facilities. The study proposal was approved by the Committee on Human Rights, Publication and Ethics (CHRPE) of the School of Medical Sciences, KNUST and KATH.

Informed consent was obtained from the respondents, anonymity maintained and the interviews conducted away from all other persons to ensure confidentiality. All completed questionnaires were kept by the researcher under lock-and-key and were only accessible to the research team.

### 3.12 Limitations of the study

- A lot of mothers after one year may not turn to report to CWC and so there may be selection bias towards women in early postpartum period.
- Women who do not attend CWC for any reason eg due to perinatal deaths or children older than 2years were excluded. It is possible the contraceptive experiences of these people could be different.

### 3.13 Strengths of the Study

The study was conducted in six different child welfare clinics and may present a true representative picture of the Sunyani municipality since they were purposively selected to cover the municipality.

### 3.14 Dissemination of Findings

Research findings will be presented at dissemination workshops for health facilities in the municipality, heads of the various facilities, staff, other healthcare professionals and the media. Finally, the results of the study will be published in peer-review journals and will also be presented at Ghana Registered Nurses and Midwife Association (GRNMA) fora.

### 3.15 Operational definitions

**Family planning:** using contraceptives or methods to space or limit births.

**Uptake of contraceptives**: in this study, uptake of contraceptive means the use of contraceptives by postpartum mothers**.**

**Contraception**: a form of birth control which prevents the sperm from fertilizing the egg is a contraceptive agent. Contraception includes barrier methods such as or diaphragm, injectable contraceptives and hormonal contraception, also known as oral contraception (Maja and Ehlers, 2004).

**Postpartum period:** Traditionally 6weeks after delivery.

**Postpartum contraception**: is the initiation and use of contraceptive method after childbirth but before fertility returns.

**Postpartum mothers**: mothers with children above six weeks but below two years.

**Contraceptive prevalence rate:** referred to number of currently married or in union postpartum women between the ages of 15-49 years who were using contraceptives at the time of the study.

**Unmet need for family planning:** The percentage of postpartum women who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the birth of their next child.

**Missed opportunities:** Occasions on which postpartum mothers seek health and are in contact with a health provider but lose the chance of receiving family planning services (inclusive of counselling and provision of method).

# CHAPTER FOUR

## 4.0 RESULTS

### Introduction

This chapter describes the reproductive characteristics of the respondents, their family planning practices as well as the factors associated with postpartum contraceptive uptake.



### 4.1 Socio- demographic characteristics

A total of 2,530 women attended child welfare clinic on the days of visit in the six (6) selected facilities. A sample of 615 women were invited to participate in the study out of whom 590 (95.9%) were recruited into the study. Of the 25 women that were not recruited; 13 left the clinic before they could be interviewed by the study team, 7 declined consent and 5 were not enrolled due to language barrier.

Table 4.1 shows the distribution of the socio-demographic characteristics of the study respondents. The mean age of the respondents was 28.9 years with a standard deviation of 5 years. Seventy percent of the respondents were between the ages of 25 and 34 years. Less than 5% of respondents were below 20 years whilst 1.5% were 40 years and over. An overwhelming majority (94.2%) of the clients had attained some level of formal education with nearly half (48.4%) attaining basic education; 5.8% had not had any formal education.

Majority (90%) of the respondents were either married or cohabiting with their partners; of the remaining 10% who were single, 6.6% had never been married. More than half (58.6%) were engaged in the informal sector (farming, trading, sewing), 21.5% were employed in the formal sector (teaching, nursing, etc) and the remaining

(19.9%) were either unemployed or students. About two-thirds (68.9%) of the respondents had one child or two children, and 5.2% had five or more children.

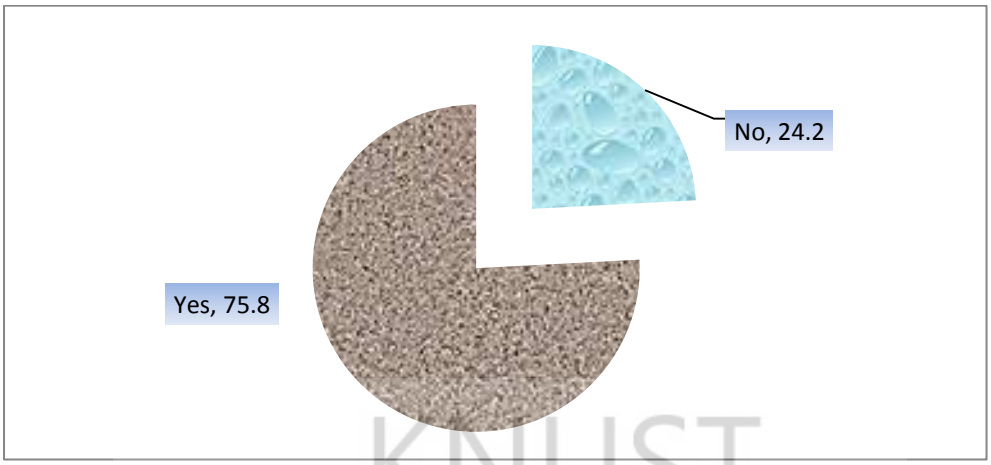
Three-quarters of the respondents indicated their last pregnancy for which they were attending the child welfare clinic had been planned (figure 4.1).

**Table 4.1: Demographic characteristics of respondents**

| Variable | Number of women (N=590) | Percent (%) |
|---|---|---|
| **Age (completed years)** | | |
| 13-19 | 25 | 4.2 |
| 20-24 | 73 | 12.4 |
| 25-29 | 232 | 39.3 |
| 30-34 | 181 | 30.7 |
| 35-39 | 70 | 11.9 |
| 40+ | 9 | 1.5 |
| **Educational background** | | |
| No formal education | 35 | 5.8 |
| Basic | 285 | 48.4 |
| SHS | 156 | 26.5 |
| Higher | 114 | 19.4 |
| **Marital Status** | | |
| Never married | 39 | 6.6 |
| Married | 465 | 78.8 |
| Co-habiting | 70 | 11.8 |
| Others* | 16 | 2.7 |
| **Occupation** | | |
| Student | 23 | 3.9 |
| Unemployed | 94 | 16 |
| Informal employment | 346 | 58.6 |
| Formal employment | 127 | 21.5 |
| **Number of living children** | | |
| 1 | 237 | 40 |
| 2 | 171 | 28.9 |
| 3 | 116 | 19.7 |
| 4 | 36 | 6.2 |
| 5+ | 30 | 5.2 |

*Other (divorced, separated, widowed)

**Figure 4.1: Timing of last pregnancy**






## 4.2 Contraceptive knowledge and prior use

Table 4.2 summarises knowledge and experiences of clients regarding the various contraceptives methods. Knowledge was nearly universal as an overwhelming 99.3% of respondents indicated they knew of ways or methods to delay or avoid pregnancy. Condoms were the most widely known contraceptive methods: 98.5% and 92.3% of respondents knew about male and female condoms respectively. This was followed by the pill (87.1%) then injectable (85.4%). The least known methods were the diaphragm and foam/jelly; only a quarter of the respondents knew about these methods. Of the traditional methods, LAM was the least known FP method among respondents.

For contraceptive methods that had ever been used by the respondents, calendar method was the most popular with 30.1% of the respondents having ever used the method, while the least patronised method was sterilization; 2 (0.3%) women stated that they had had bilateral tubal ligation after their last pregnancy for which they were at the child welfare clinic and none of the respondents' partner had been sterilized.

The most patronised method prior to the last pregnancy was the calendar method; about a fifth (19.1%) of the women were using the calendar method as a method of family planning. As expected, none of the women were sterilized prior to their last pregnancy.

**Table 4.2: Contraceptive knowledge and prior use**

| Contraceptive method | Knowledge of Method n (%) | Ever used method n (%) | Method used before last pregnancy n (%) |
|---|---|---|---|
| Female sterilization | 329 (56.3) | 2 (0.3) | 0.0 |
| Male sterilization | 193 (32.9) | 0.0 | 0.0 |
| IUD Method | 330 (56.3) | 16 (2.9) | 10 (1.7) |
| Implants | 394 (67.2) | 26 (4.6) | 8 (1.5) |
| Diaphragm | 147 (25.0) | 9 (1.5) | 1 (0.2) |
| Injectables | 498 (85.4) | 132 (22.8) | 58 (10.2) |
| Pill Method | 508 (87.1) | 145 (25.3) | 67 (11.9) |
| Female Condom | 442 (92.3) | 12 (2.0) | 4 (0.7) |
| Male Condom | 467 (98.5) | 129 (22.1) | 70 (12.2) |
| Foam or Jelly | 152 (25.5) | 9 (1.5) | 2 (0.3) |
| Emergency Contraception | 355 (60.5) | 44 (7.7) | 26 (4.7) |
| Calendar Method | 440 (74.8) | 175 (30.1) | 111 (19.1) |
| Withdrawal | 413 (70.1) | 81 (13.9) | 52 (9.0) |
| Lactational Amenorrhea | 238 (40.3) | 29 (4.9) | 8 (1.4) |

For respondents who had ever used a contraceptive method, Table 4.3 presents the median number of months and inter-quartile ranges since respondents started using contraception. With the exception of two women who had been sterilised, all the other women had been on contraception for a median period of at least one year. The commonest median duration of use was 24 months as women on oral contraceptive pill, injectables, female and male condoms, withdrawal, and emergency contraception

had been on these methods for a median duration of 24 months since their first use of a method. Although the foam/jelly and the diaphragm were among the least patronised methods, women on these methods had used them for the longest period; median duration of use 96 months (interquartile range; 24-96) and 60 months (interquartile range; 3-72) respectively.

**Table 4.3: Median number of months since first contraceptive use**

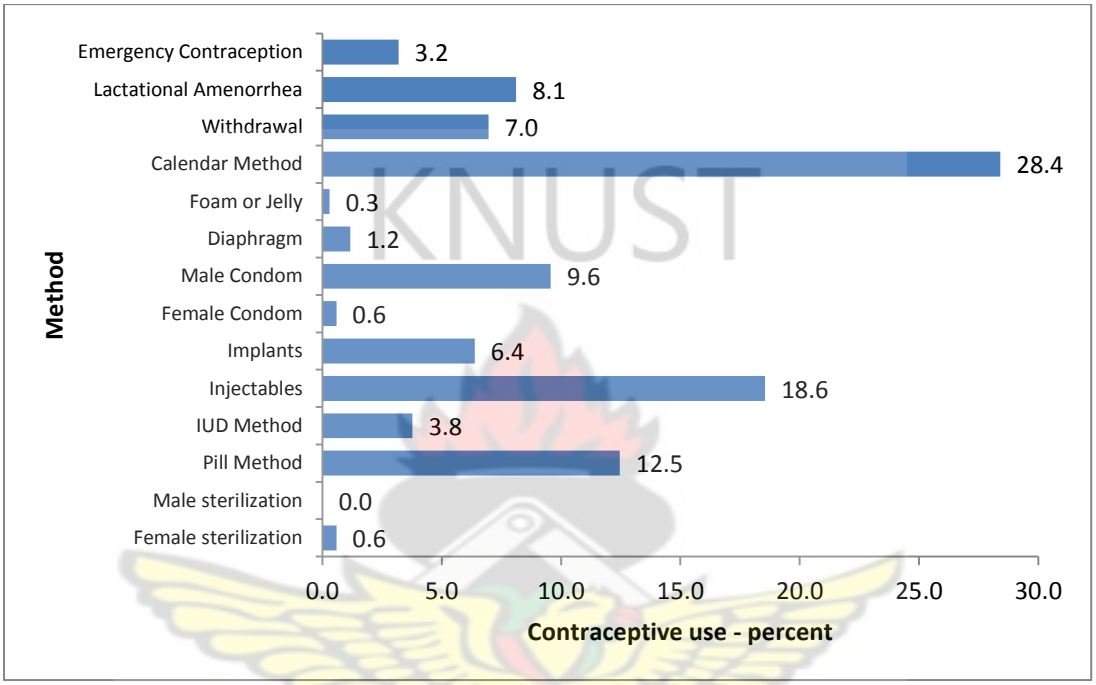
| Method | Number of women | Median duration of use, months (interquartile range) |
|---|---|---|
| Female sterilization | 2 | 10 (2-18) |
| Pill Method | 142 | 24 (6.60) |
| IUD Method | 24 | 12 (6-24) |
| Injectables | 116 | 24 (6-57) |
| Implants | 24 | 12 (5.5-24) |
| Female Condom | 12 | 24 (5.3-36) |
| Male Condom (partner) | 106 | 24 (12-60) |
| Diaphragm | 3 | 60 (3-72) |
| Foam or Jelly | 7 | 96 (24-96) |
| Calendar Method | 161 | 48 (24-84) |
| Withdrawal | 48 | 24 (10.3-57) |
| Lactational Amenorrhea | 29 | 12 (6-21) |
| Emergency Contraception | 37 | 24 (12-36) |

### 4.2.1 Current Contraceptive Use among Postpartum Mothers (contraceptive prevalence rate)

The contraceptive prevalence rate (CPR) was 57.6% for any methods among currently married postpartum mothers 15-49 years. The calendar method (28.4%) was the most widely patronised method, followed by the injectables (18.6%), and then the oral pill

(12.5%). The least patronised methods were sterilization, female condoms and the foam/jelly. None of the respondents' partners had had vasectomy (figure 4.2).

**Figure 4.2: Contraceptive methods that were being used by postpartum mothers at the time of the study**

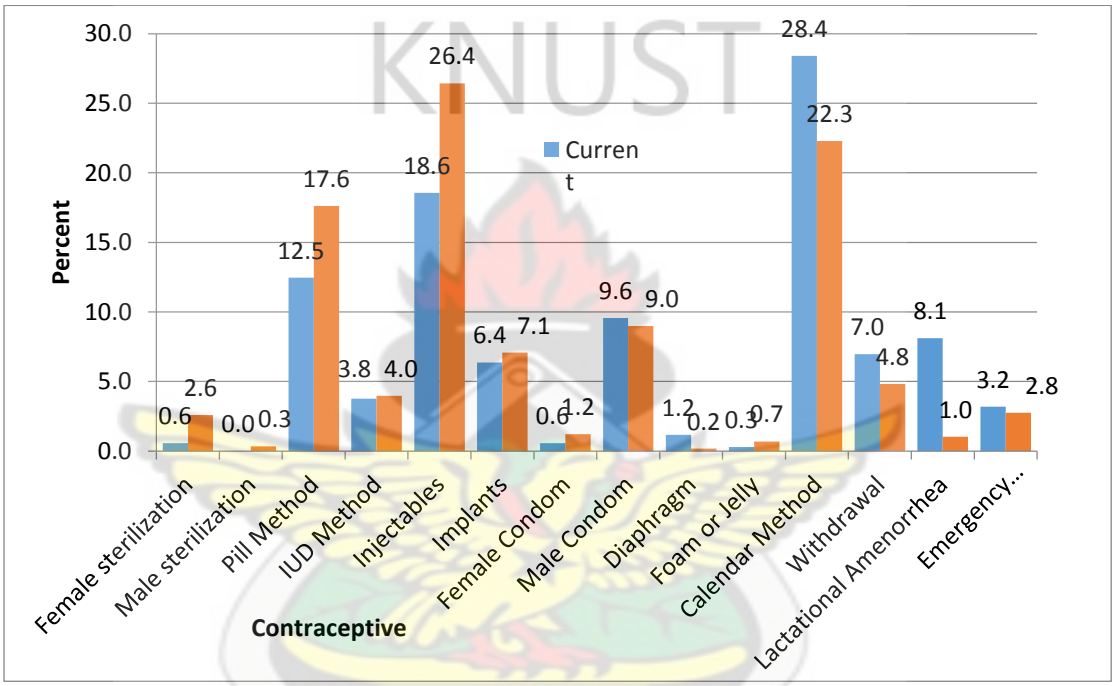



### 4.2.2 Intension to Use Contraception and Preferred Method

Respondents were asked if they intended using FP in the future and the preferred contraceptive method. Nearly 80% of respondents indicated they would use contraception in the future to delay or avoid pregnancy. Figure 4.3 compares the methods that were being used and the preferred future contraceptive methods of postpartum mothers who intended using contraception in the future. Into the future, most postpartum mothers who intended using a FP method would prefer the injectables (26.4%), followed by the calendar method (22.3%) and then the pill (17.6%), than any other methods. Interestingly, 26.4% and 2.6% of women who intended using contraception in the future would prefer injectables and female sterilization methods respectively, compared to the 18.6% and 0.6% of the women

who were using the two methods respectively at the time of the study. For the 1%, 22.3% and 4.8% of women who intended using contraceptive in the future they would not prefer lactational amenorrhoea, calendar and withdrawal methods respectively as compared to 8.1%, 28.4% and 7.0% respectively of the women who were using the same contraceptives at the time of the study.

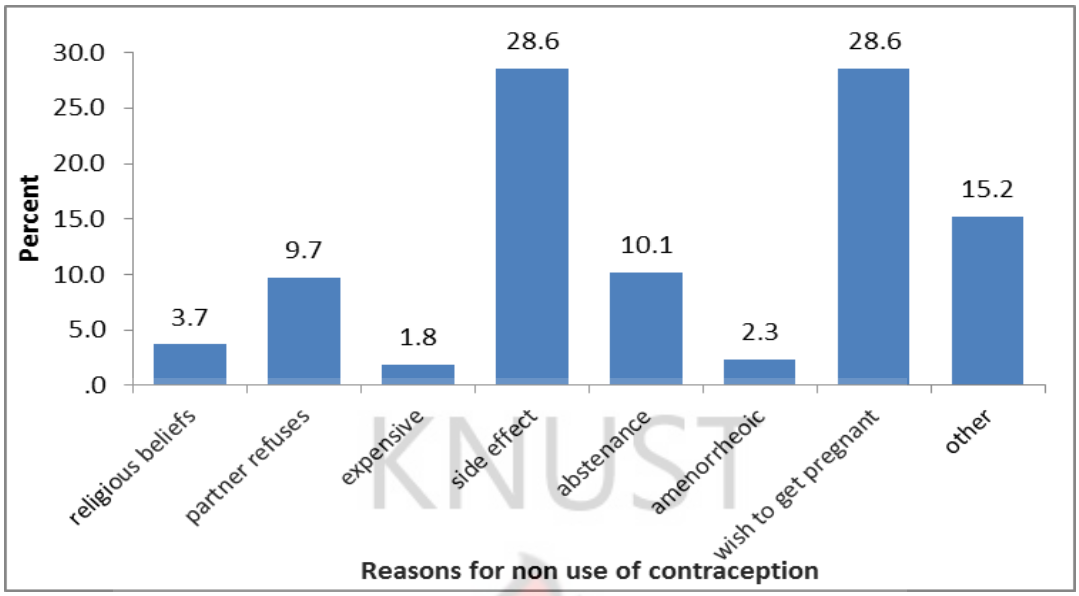
**Figure 4.3: Current and future preferred methods of contraception**




### 4.2.3 Reasons for Non- Use of Postpartum Contraception

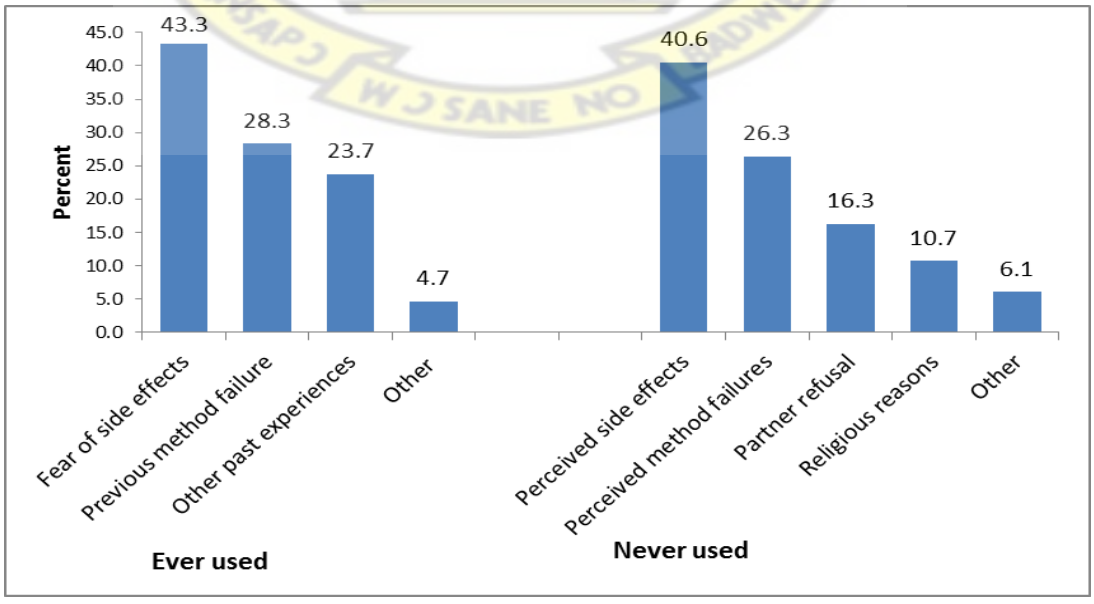
Figure 4.4 presents possible reasons for non- use of contraception by postpartum mothers. Postpartum mothers who wanted to get pregnant at that time (28.6%) were not using contraception. Nearly three out of 10 (28.6%) postpartum mothers ascribed method side effects as their reasons for not using contraception. Partner refusal (9.7%) and religious beliefs (3.7%) were also suggested as reasons for the non- use of postpartum contraception. The cost of FP methods was provided as a reason for about 2% of the respondents.

**Figure 4.4: Reasons for non-use of postpartum contraception**




Among women who have ever used contraception, their reasons for not using contraception were fear of side effects(43.3%), previous method failure (28.3%) and other past experiences (23.7%). Of those who had never used contraceptives their reasons were perceived side effects (40.6%), perceived method failures (26.3%), partner refusal (16.3%), and religious reasons (10.7%) (Figure 4.5).

**Figure 4.5: Most important barriers to contraceptive use among Postpartum mothers who had previously or never used contraception**



The study sought to find reasons that would make a respondent adopt a contraceptive method in the postpartum period. From Table 4.4, the need to space children (74.8%) was identified as the most important reason for using contraception, followed by the desire not to have any more children (49.9%). About a quarter of postpartum women would use contraception for medical reasons or on resuming their menses.

**Table 4.4: Facilitating factors for contraceptive use among postpartum women**

| Facilitating factors | Number of women (n) | Percent (%) |
|---|---|---|
| Child spacing | 448 | 74.8 |
| Want no more children | 299 | 49.9 |
| Resumption of sex | 182 | 30.4 |
| Partner request | 175 | 29.2 |
| Medical reasons | 158 | 26.4 |
| Resumption of menses | 157 | 26.2 |

Table 4.5 compares background characteristics with contraceptive use. Educational background and occupation were significantly associated with contraceptive uptake. Contraceptive uptake increased with increasing educational background (p=0.001). Women in formal employment were most likely to use contraceptives (60%), followed by those in the informal sector (53%), while the unemployed were least likely to use contraception (43%). Age, marital status, number of living children, number of ANC visits and timing of the last pregnancy were not significantly associated with contraceptive uptake.

**Table 4.5: Demographic characteristics of respondents and current contraceptive use**

| Variables | Non-Contraceptive Users n (%) | Current Contraceptive Users n (%) | Pearson chi-square | Degree of freedom (df) | P-value |
|---|---|---|---|---|---|
| **Age group (years)** | | | 0.82 | 2 | 0.67 |
| 13-19 | 13 (56.52) | 10 (43.48) | | | |
| 20-29 | 138 (46.78) | 157 (53.22) | | | |
| 30+ | 119 (47.22) | 133 (52.78) | | | |
| **Educational background** | | | 13.46 | 2 | 0.001 |
| No formal education | 24 (60.00) | 16(40.00) | | | |
| Basic education | 141 (52.81) | 126(47.19) | | | |
| Secondary or higher | 99 (38.67) | 157(61.33) | | | |
| **Marital status** | | | 1.02 | 1 | 0.31 |
| Single* | 29 (53.70) | 25(46.30) | | | |
| Married | 239 (46.50) | 275(53.50) | | | |
| **Occupation** | | | 6.66 | 2 | 0.04 |
| Unemployed | 64 (56.64) | 49(43.36) | | | |
| Informal sector | 154 (46.81) | 175(53.19) | | | |
| Formal sector | 50 (40.00) | 75(60.00) | | | |
| **Number of living children** | | | 1.09 | 2 | 0.58 |
| 1 | 112 (49.56) | 114(50.44) | | | |
| 2 | 79 (47.88) | 86(52.12) | | | |
| 3+ | 79 (44.38) | 99(55.62) | | | |
| **Number of ANC visits** | | | 0.94 | 1 | 0.33 |
| Inadequate (<4) | 54 (50.94) | 52(49.06) | | | |
| Adequate (4+) | 208 (45.71) | 247(54.29) | | | |
| **Timing of last pregnancy** | | | 0.29 | 1 | 0.59 |
| Did not want to be pregnant then | 69 (49.29) | 71(50.71) | | | |
| Wanted to be pregnant | 202 (46.65) | 231(53.35) | | | |

*single (never married, widowed, divorced, separated)

Over 90% of current contraceptive users and 82.1% non- users believed that a woman should start family planning shortly after delivery to avoid getting pregnant. This knowledge has been a good influence on respondents to adopt postpartum family planning (p=0.003). Of the women that were using contraception 71.2% said ANC counselling on FP made them take up FP after delivery (p=0.001) of which 57.8%

said they were told of the side effects associated with the FP method they were using (p=0.01) (data not shown).

**Table 4.6: Factors associated with contraceptive uptake**

| STATEMENTS | Current Contraceptive Users n (%) | Non Users of Contraception n (%) | p-values |
|---|---|---|---|
| FP was one of the issues discussed at the ANC visits | 268 (88.8) | 259 (90.1) | 0.86 |
| Contraception encourages women to be promiscuous | 125 (41.3) | 137 (47.4) | 0.32 |
| FP enables women to have control over reproductive health | 268 (88.9) | 243 (84.4) | 0.06 |
| FP is woman's business and men should not be worried about it | 80 (26.4) | 96 (33.2) | 0.01 |
| Other family members do not have to know that I use contraceptives | 202 (67.0) | 182 (63.1) | 0.06 |
| Did the health workers who spoke to you about FP tell you that there are many methods? | 268 (88.6) | 239 (82.9) | 0.03 |
| My partner encourages me to take up FP | 210 (69.6) | 151 (52.4) | 0.001 |
| Attitudes of health workers discouraged me from seeking FP services | 90 (29.7) | 114 (39.5) | 0.001 |
| Side effects discouraged me from using FP | 172 (56.8) | 206 (71.4) | 0.001 |
| Number of clients who taught they were given a lot of information on FP services during ANC. | 255 (84.6) | 232 (80.6) | 0.19 |
| When you attended antenatal, did the health workers speak to you about FP | 269 (89.2) | 269 (93.4) | 0.06 |
| Were you counselled about FP during your postnatal, that is the 40 days visit to a health facility? | 288 (95.3) | 270 (93.7) | 0.69 |
| Since you started attending child welfare clinic, have the health workers spoken to you about contraception? | 280 (92.6) | 264 (91.6) | 0.74 |

Table 4.6 shows clients perception of factors associated with contraceptive uptake. Comparatively, more contraceptive non-users felt that FP was the woman's business and men should not worry about it (33.2% vs. 26.4%; p=0.01). On the other hand, more contraceptive users were told that there were many contraceptive methods compared to non-users (88.6% vs. 82.9%; p=0.03). Moreover, more contraceptive

users admitted their partners encouraged them to take up FP compared to non-users (69.6% vs. 52.4%; p=0.001). Also more non-users said attitude of health workers discouraged them from seeking FP services (39.5% vs. 29.7%; p=0.001). Furthermore, more non-users indicated side effects discouraged them from using FP as compared to users (71.4% vs. 56.8%; p=0.001). The proportions of contraceptive users and non-users did not differ significantly with regards to the other statements.

The study also assessed whether women who were using postpartum contraception were taken through the recommended procedural steps; Greet, Ask, Tell, Help, Explain and Review/ Return visit (GATHER) during their counselling sessions and whether or not there were significant differences in the proportions of women who were taken through GATHER compared to those who were not. Overall, significantly more women (55-74.2%) who were taken through all the recommended GATHER steps compared to those who were not (all p-values=0.001). Over 70% were taken through the first three steps (Greet, Ask, and Tell), 61-64% were taken through the next two steps (Help, Explain) and 55% were asked to return for review or report any unusual experiences (Table 4.7).

**Table 4.7: The GATHER methodology of counselling and contraceptive uptake**

| GATHER Attribute | Given/Experienced Attribute | | P-value |
|---|---|---|---|
| | Yes | No | |
| Usually welcomed you with a smile? | 211 (74.2) | 74 (25.8) | 0.001 |
| Usually engaged you in a chat that made you feel at home? | 210 (73.2) | 77 (26.8) | 0.001 |
| Usually offered to assist you when you visited for a service? | 204 (72.2) | 79 (27.8) | 0.001 |
| Usually provided with a lot of information about the services available? | 2 07 (72.5) | 78 (27.5) | 0.001 |
| Usually gave you a chance to decide on a family planning method of your choice? | 176 (61.6) | 109 (38.4) | 0.001 |
| Usually examine you (for example c heck blood pressure, vaginal examination for IUD, etc.)? | 176 (61.6) | 109 (38.4) | 0.001 |
| Usually gave you information on your chosen contraceptive method? | 184 (64.3) | 103 (35.8) | 0.001 |
| Usually asked you to return for a review or report if you noticed anything unusual? | 153 (55) | 126 (45) | 0.001 |

### 4.3 Determinants of postpartum family planning uptake

Univariable analysis of the determinants of postpartum contraceptive uptake is shown in Table 4.8. Respondents who desired to space their children were more likely to use contraception as compared to those who didn't desire to space their children (unadjusted RR, 1.46; 95% C.I., 1.09, 1.95; P= 0.01), those who patronised PPFP due to FP counselling given at ANC as compared to their counterparts who didn't due to counselling at ANC (unadjusted RR, 1.44; 95% C.I., 1.10, 1.88; P= 0.01), those with some formal education (basic, secondary or higher) as compared to those with no formal education (p= 0.04). The strongest predictors of contraceptive use were prior use of contraception (unadjusted RR, 9.53; 95% C.I., 4.91, 18.51; p= 0.001), discussing FP with partner (unadjusted RR, 1.58; 95% C.I., 1.21, 2.05; p= 0.001) and type of contraceptive used before last birth (unadjusted RR, 2.54; 95% C.I., 1.95, 3.32; P=0.001).

**Table 4.8: "Univariable analysis" of association between background characteristics and postpartum contraceptive use**

| Variables | Current Contraceptive Use n (%) | Unadjusted RR (95% C.I.) | P-value |
|---|---|---|---|
| **Age group(years)** | | | 0.82 |
| 13-19 | 10 (43.48) | 1 | |
| 20-29 | 157 (53.22) | 1.22 (0.65, 2.32) | |
| 30+ | 133 (52.78) | 1.21 (0.64, 2.31) | |
| **Educational background** | | | 0.04 |
| No formal education | 16 (40.0) | 1 | |
| Basic education | 126 (47.19) | 1.18 (0.70, 1.98) | |
| Secondary or higher | 157 (61.33) | 1.53 (0.92, 2.56) | |
| **Marital status** | | | 0.49 |
| Single* | 25 (46.30) | 1 | |
| Married | 275 (53.50) | 1.16 (0.77, 1.74) | |
| **Occupation** | | | 0.21 |
| Unemployed | 49 (43.36) | 1 | |
| Informal sector | 175 (53.19) | 1.23 (0.89, 1.68) | |
| Formal sector | 75 (60.0) | 1.38 (0.97, 1.98) | |
| **Number of living children** | | | 0.77 |
| 1 | 114 (50.44) | 1 | |
| 2 | 86 (52.12) | 1.03 (0.78, 1.37) | |
| 3+ | 99 (55.62) | 1.10 (0.84, 1.44) | |
| **Number of ANC visits** | | | 0.51 |
| Inadequate (<4) | 52 (49.06) | 1 | |
| Adequate (4+) | 247 (54.29) | 1.11 (0.82, 1.49)) | |
| **ANC FP counselling** | | | 0.01 |
| Yes | 213 (61.74) | 1.44(1.10, 1.88) | |
| No | 72 (42.86) | 1 | |
| **Discussed FP with partner** | | | 0.001 |
| Frequently | 219 (62.04) | 1.58(1.21, 2.05) | |
| Hardly/Never | 76 (39.38) | 1 | |
| **Desire to space children** | | | 0.01 |
| Yes | 246 (57.21) | 1.46 (1.09, 1.95) | |
| No | 56 (39.16) | 1 | |
| **Resumption of sex** | | | 0.07 |
| Yes | 195 (48.99) | 1 | |
| No | 107 (61.14) | 1.25 (0.99, 1.58) | |
| **Resumption of menses** | | | |
| Yes | 221 (52.87) | 1.01 (0.78, 1.31) | 0.93 |
| No | 81 (52.26) | 1 | |
| **Prior use of contraception** | | | 0.001 |
| Yes | 292 (66.5) | 9.53 (4.91, 18.51) | |
| No | 9 (7.00) | 1 | |
| **Type of previous contraceptive used** | | | 0.001 |
| None | 73 (28.63) | 1 | |
| Long acting | 11(64.71) | 2.26 (1.20, 4.26) | |
| Short acting | 212 (72.85) | 2.54 (1.95,3.32) | |

*single (never married, widowed, divorced, separated)
RR-Relative risk; CI-confidence interval

**Table 4.9: "Final multivariable model" for determinants of postpartum contraceptive use**

| Variables | Current Contraceptive Use n (%) | Adjusted RR (95% C.I.) | P-Value |
|---|---|---|---|
| **Educational background** | | | 0.27 |
| No formal education | 16 (40.0) | 1 | |
| Basic education | 126 (47.19) | 0.95 (0.54, 1.65) | |
| Secondary or higher | 157 (61.33) | 1.16 (0.67, 2.02) | |
| **ANC FP counselling** | | | 0.03 |
| Yes | 213 (61.74) | 1.35 (1.02, 1.79) | |
| No | 72 (42.86) | 1 | |
| **Discussed FP with partner** | | | 0.16 |
| Frequently | 219(62.04) | 1.22 (0.92, 1.62) | |
| Hardly/Never | 76 (39.38) | 1 | |
| **Desire to space kids** | | | 0.38 |
| Yes | 246 (57.21) | 1.15 (0.84,1.57) | |
| No | 56 (39.16) | 1 | |
| **Previous contraceptive used** | | | 0.001 |
| None | 73 (28.63) | 1 | |
| Long acting | 11 (64.71) | 1.79 (0.92, 3.50) | |
| Short acting | 212 (72.85) | 2.03 (1.52, 2.71) | |

On multivariable analysis (Table 4.9), type of previous contraceptive used and ANC FP counselling (adjusted RR, 1.35; 95% C.I., 1.02-1.79; P=0.03) were independent facilitating factors of contraceptive use. Postpartum women who used contraceptives due to FP counselling at ANC were 1.4 times more likely to use contraceptives as compared to their counterparts who said ANC FP counselling did not influence their decision to use contraception (61.7% vs. 42.9%; adjusted RR, 1.35; 95% C.I., 1.02-1.79; P=0.03). Women who used short acting contraceptives previously were about two times more likely (72.9% vs. 28.6%; adjusted RR, 2.03; 95% C.I.1.52-2.71), while those who had previously used long acting contraceptives were more than one-and-half times more likely (64.7% vs. 28.6%; adjusted RR 1.79; 95% C.I. 0.92, 3.50; P= 0.001) to use contraceptives compared to their counterparts who had previously not used any method. The associations between discussing FP with partner (P=0.16),

educational level (p=0.27) or desire to space children (p=0.38) and contraceptive use were no longer significant.

Tables 4.10 and 4.11 show factors associated with future contraceptive uptake. On univariable analysis, (Table 4.10), respondents who had used long acting contraceptives in the past were more likely to use contraception in the future compared to their counterparts who didn't use contraceptives (unadjusted RR, 1.42; 95% C.I., 0.85, 2.37; p=0.02). Other significant predictors of future contraceptive use were type of current contraceptives used, desire to space children and discussing family planning with partner (all p=0.01). Age of respondents, occupation, marital status, number of living children, educational level, and number of ANC visits, were not statistically significant in influencing the future contraceptive intentions of respondents.

**Table 4.10: "Univariable analysis" of background characteristics and Future contraceptive intentions**

| Variables | Future contraceptive intensions n (%) | Unadjusted RR (95% C.I.) | P-Value |
|---|---|---|---|
| **Age group (years)** | | | 0.63 |
| 13-19 | 22 (95.65) | 1.24 (0.80, 1.92) | |
| 20-29 | 230 (77.44) | 1.00 (0.83, 1.21) | |
| 30+ | 195 (77.38) | 1 | |
| **Educational background** | | | 0.77 |
| No formal education | 26 (68.42) | 1 | |
| Basic education | 215 (79.63) | 1.16 (0.77, 1.75) | |
| Secondary or higher | 202 (78.60) | 1.15 (0.76, 1.73) | |
| **Marital status** | | | 0.80 |
| Single* | 43 (81.13) | 1.04 (0.76, 1.43) | |
| Married | 401 (77.86) | 1 | |
| **Occupation** | | | 0.99 |
| Unemployed | 87 (77.68) | 1.02 (0.76, 1.36) | |
| Informal sector | 264 (79.28) | 1.04 (0.82, 1.31) | |
| Formal sector | 94 (76.42) | 1 | |
| **Number of living children** | | | 0.89 |
| 1 | 173 (76.21) | 1 | |
| 2 | 127 (77.44) | 1.02 (0.81, 1.28)) | |
| 3+ | 144 (80.45) | 1.06 (0.85, 1.32)) | |
| **Number of ANC visits** | | | 0.75 |
| Inadequate (<4) | 87 (80.56) | 1.04 (0.82, 1.31) | |
| Adequate (4+) | 351 (77.48) | 1 | |
| **Discussed FP with partner** | | | 0.01 |
| Frequently | 308 (88.25) | 1.32 (1.08, 1.62) | |
| Hardly/Never | 130 (66.67) | 1 | |
| **Desire to space children** | | | 0.01 |
| Yes | 362 (83.60) | 1.37 (1.08, 1.73) | |
| No | 86 (60.99) | 1 | |
| **Type of previous contraceptive used** | | | 0.02 |
| None | 165 (66.27) | 1 | |
| Long acting | 16 (94.12) | 1.42 (0.85, 2.37) | |
| Short acting | 252 (87.80) | 1.33 (1.09, 1.61) | |
| **Type of current contraceptive used** | | | 0.01 |
| None | 179 (66.79) | 1 | |
| Long acting | 32 (91.43) | 1.37 (0.94, 1.99) | |
| Short acting | 227 (89.02) | 1.33 (1.10, 1.62) | |

**Table 4.11: "Final multivariable model" for determinants of future contraceptive use**

| Variables | Intension to use contraceptive n (%) | Adjusted Relative Risk (95% C.I.) | P-Value |
|---|---|---|---|
| **Desire to space children** | | | 0.05 |
| Yes | 362 (83.60) | 1.28 (0.99, 1.65) | |
| No | 86 (60.99) | 1 | |
| **Discussed FP with partner** | | | 0.09 |
| Frequently | 308 (88.25) | 1.20 (0.97, 1.50) | |
| Hardly / never | 130 (66.67) | 1 | |
| **Previous contraceptive use** | | | 0.52 |
| None | 165 (66.27) | 1 | |
| Long acting | 16 (94.12) | 1.17 (0.66, 2.08) | |
| Short acting | 252 (87.80) | 1.13 (0.91, 1.41) | |
| **Current contraceptive use** | | | 0.48 |
| None | 179 (66.79) | 1 | |
| Long acting | 32 (91.43) | 1.16 (0.75, 1.80) | |
| Short acting | 227 (89.02) | 1.14 (0.91, 1.42) | |

On multivariable analysis (Table 4.11), the desire to space children remained the only independent predictor of future contraceptive use. Respondents who desired to space their children were 1.3 times more likely to use contraceptives in the future than those who didn't desire to (adjusted RR, 1.28; 95% C.I., 0.99-1.65; p=0.05). There was no significant association between discussing FP with partner (p=0.09), type of previous contraceptive (p=0.52) or current contraceptive use (p=0.48) and future contraceptive intentions among the women studied.

# CHAPTER FIVE

# 5.0 DISCUSSION

## Introduction

This chapter discusses the main findings of the study in relation to existing literature on the subject as well as policy implications of the findings and suggests direction for future research.

The study found a CPR of 57.6% among currently married postpartum women in the Sunyani Municipality. A higher proportion of the women intended using contraceptive in future with an intended shift from the less reliable methods to more reliable or effective methods. In the multivariate analysis, ANC FP counselling and type of previous contraceptive used were facilitating factors for current postpartum contraceptive use whilst desire to space children was the facilitating factor for future contraceptive use.

## 5.1 Socio-demographic characteristics

In this study, the educational background and occupation of respondent were important in influencing the decision to current use of contraception. Studies by (Rojnik et al., 1995, Tehrani et al., 2001) have revealed that postpartum women with higher education are more likely to use reliable contraceptive regularly compared to their counterparts with little or no education.

Similarly, Elliason et al. (2013) indicated that the more educated a pregnant woman was, the more likely she was to consider PPFP acceptability as compared to their counterparts with no formal education.

The age of respondent and the marital status did not seem to influence the use of contraception in this study. However, a study done in Shanghai on newly married couples revealed that most young couples aged less than 28 years old used unreliable FP methods which resulted in high rate of repeated pregnancy in the extended postpartum period after their first birth (Ross and Winfery, 2004). However, a descriptive study done in El Salvador by Newmann et al. (2005) revealed that young postpartum women living with a partner were more likely to use contraceptives than those living without a partner.



## 5.2 Contraceptive knowledge and use

Findings of this study suggest that knowledge of contraception was nearly universal among respondents, although variations were observed among the various methods. The male condom was the most widely known method for delaying or avoiding pregnancy, followed by the oral pill and injectables. This is consistent with findings of the 2008 GDHS (Ghana Statistical Service et al., 2009). Studies conducted in Kenya and South Africa observed an increased utilization of PPFP following interventions to increase awareness (Hani et al., 2003; Mwangi et al., 2008). Therefore increasing the information provided on the methods available following delivery has a strong influence on the women's decisions to use PPFP.

Postpartum women who had ever used contraception and those amongst them who used a method prior to their index child were more likely than their counterparts who did not use any method previously to adopt a FP method. According to Ashford (2003) postpartum women who have used contraceptives in the past and intend to use them in the future are more likely to use contraceptives than those who have not used contraceptives in the past. Moreover a study done in Iran revealed that prior

contraceptive use was a significant factor in influencing current contraceptive use (Tehrani et al., 2001).

The CPR of 57.6% among currently married postpartum mothers in the Sunyani Municipality is comparable to the CPR of 53% reported by Morhe and Ankobea (2011) in the study contraceptives choices of new FP clients in Komfo Anokye Teaching Hospitals. However, the finding in this study seems higher than the 24% and 35% CPRs observed among currently married women in the 2008 GDHS (Ghana Statistical Service et al., 2009) and 2011 Multiple Indicator Cluster Survey (Ghana Statistical Service, 2012) respectively. The high CPR found in this study may be attributable to the fact that this was conducted in only one region whilst GDHS and MICS were averages for the whole country. Moreover, whilst MICS and GDHS computed for currently married women in the reproductive age, this study focussed on currently married postpartum women. More recently, Morhe and Dalton (2013) reported a contraceptive uptake of 39% among referred postpartum women in KATH. The low CPR in this study may be due to the fact that the study involved women 2-12 months postpartum of which nearly half were up to six months postpartum. Most of them might not have started PPFP because they were practicing exclusive breastfeeding.

Postpartum use of highly effective contraceptive methods can prevent unintended pregnancies and ensure adequate birth spacing. Unintended pregnancies and short inter pregnancy intervals are associated with adverse maternal and infant outcomes (Zhu et al., 1999). In a tracer study on women attending child welfare clinic in KATH, of the nearly 40% who took up contraceptives, 71% used effective methods (Morhe and Dalton, 2013). The level of contraceptive use among the postpartum mothers in the current study therefore, would suggest improved health outcomes for

mother and child following the index delivery and in their subsequent pregnancy due to the reduced risk of unintended pregnancies and short birth intervals, especially that the median duration of contraceptive uptake was commonly two years or more, and provided most were on effective contraceptive methods. However, since most mothers relied on less effective methods, such as the calendar method, this desired gain may not be wholly realised.

Postpartum contraceptive counselling needs to deliberately encourage the use of more effective methods; addressing specific misconceptions and fears about these methods are likely to improve uptake. This study found method side effect among respondents who had ever used contraception, and perceived side effect among non-users as important barriers to current contraceptive use. In a similar study by Hubacher et al. (2013), on uptake of levonorgestrel intrauterine systems among recent postpartum women in Kenya the commonest reasons for not choosing the method were fear of pain/injury/discomfort modesty issues regarding insertion and fear of hormonal/health side effects. Whiles addressing these misconceptions would increase uptake, there is the need to emphasize the use of long reversible methods as this study found prior contraceptive use as the most significant determinant of current contraceptive use. In another study in the California, long-acting reversible contraception was found to have the ability to protect from unintended pregnancy consistently for a long period of time and is recommended as a preferred contraceptive option (Bocanegra et al., 2014).

Results of the study show that respondents who intend to use contraception in the future would turn to rely on more effective methods and reduce their reliance on the traditional methods that are less effective. Similar findings were observed in Elliason et al. (2013) as they found selection of injectables as the preferred method of intention

to adopt PPFP. Ross and Winfery (2001) observed that while unmet need rests on fertility preferences, statements of intentions to use contraceptives pertains to actual contraceptive use. This means that by expressing intention to practice contraception, women are able to better visualize their future need for FP and therefore are more likely to translate it into actual use. Consequently, women's statements about their intentions to use contraceptives have received attention in recent times as an alternative or supplement to information about unmet need (Roy et al., 2003).

A follow up study conducted five years after NFHS in India revealed that 49% of the women who had stated intention to use contraception actually did use it, compared with more than 29% of the women who did not intend to use contraceptives (Roy et al., 2003). The study also reported that women who intended to use a contraceptive method and had no intentions of having a child one year after birth were significantly more likely than others to use a method. Analysis of demographic and health surveys of 27 countries by (Ross and Winfery, 2001) also reported that where the stated intention to use contraception was high, there was substantial rise in the actual contraceptive use.

However, it is important to remember that childbearing intentions and behaviour are dynamic concepts that depend on a number of factors. Roy et al. (2003) reported that women may not adhere to their intentions of contraceptive use within the first year postpartum because of sudden death of the infant, change in economic conditions of the household, opposition from family members including spouses as well as lack of good quality FP services. There is therefore the need to receive the intended shift from less effective methods of contraception to more effective ones with guarded optimism.

## 5.3 Militating factors of contraceptive use

Method-related side effects for current contraceptive users and perceived side effects of non-users, previous method failure wanting to have more children were found to be important militating factors of contraceptive use. Whiles some respondents cited partner refusal and religious beliefs among others, method-related side effect was found to be important in determining contraceptive use. In a longitudinal study in southern Ghana, Bailey (2010) found previous experiences with method-related side effect as the most important factor that discouraged postpartum women from using contraception. Mahmood et al. (2011), found that postpartum mothers wanting to be pregnant or have more children discouraged them from the use of contraception.

## 5.4 Facilitators of postpartum contraceptive use

The study findings suggest that FP service providers may have used every opportunity during ANC, PNC and child welfare clinic counselling to educate postpartum mothers on FP. The univariable analysis showed that these had a positive effect on respondents' decisions to adopt PPFP. These findings are consistent with several studies in Ghana and elsewhere which pointed to the important role ANC, PNC and child welfare clinic counselling play in exposing postpartum mothers to FP (Adegbola and Okunowo, 2009; Faculty of Family Planning and Reproductive Health Care Guidance, 2004; Peedicayil, 2003). Indeed Kariuki et al. (2011) found postnatal clinic counselling to be a major influence on postpartum first time mothers in Nairobi deciding on contraception.

This study suggests that although personal conviction about the benefit of PPFP was important, a postpartum woman's perception of how her partner will consider her decision to adopt PPFP was also of greater concern (p=0.001) in the decision-making process. In this study majority of current contraceptive users among the respondents

indicated that encouragements received from their partners made them take up contraception. This finding is also supported by several studies in Ghana and other parts of sub-Saharan Africa that have pointed to the important role of partners in the decision-making process about contraceptive uptake (Elliason et al., 2013; Morhe and Dalton, 2013; Bawah, 2002; Crissman et al., 2012; Gebresselassie and Mishra, 2011).

GATHER and REDI (Rapport building, Exploration, Decision making, Implementing the decision) are both acronyms used for counseling in FP, but GATHER is more popular. The study findings confirm the importance of the GATHER framework for FP counselling as this will increase clients' satisfaction of the services they receive.

### 5.5 Determinants of postpartum contraceptive uptake

The finding that ANC FP counselling was a facilitating factor of PPFP suggests that such counselling increased the chances of postpartum mothers using contraception in the postpartum period. These findings conform to those of other studies that have made a strong case for intensifying FP counselling during ANC (Arrowsmith et al., 2014; Barber, 2007). Similar findings were also reported from one study in Mexico, where women who received FP advice during prenatal care were more likely to use a contraceptive than those who did not receive such advice. Strong associations between maternal health care and FP practice have been established in previous studies (Barber, 2007; Zeira and Tsui, 2001; Ahmed and Mosley, 2002; Hotchkiss et al., 2005).

The current study also highlighted the importance of women discussing FP with their partners. Similarly, Elliason et al. (2013) reported that a pregnant woman's perception of how her partner considers her decision to adopt PPFP was important in the decision-making process. It appears pregnant women need the assurance of partner

acceptability before they will commit to use PPFP, which is a consequence of discussing FP. Also the prior use of contraception was found to be an important predictor of contraceptive use in the postpartum period. In Iran, Yilmazel and Balci (2013) observed that pregnant women who had previously used contraception were more likely than those who did not to use PPFP. The prior use of specific contraceptive methods predicted the use of contraception in the postpartum period (Adegbola and Okunowo, 2009; Balkus et al., 2007; Elliason et al., 2013).

A postpartum woman's educational status did not influence her use of FP methods in this present study. Even though educational level is associated with contraceptive knowledge it does not necessarily predict contraceptive uptake or intention to use contraception among postpartum mothers (Newmann et al., 2005). However, other studies have observed that postpartum women with higher education are more likely to use reliable contraceptive regularly (Rojnik et al., 1995; Tehrani et al., 2001).

In this present study, wanting to space children or births was the most important predictor of future contraception intentions. Similar findings were reported in Ilorin, Nigeria, where women aged 15-35 years were found to use contraception primarily to space their births (Oni and McCarthy, 1986) as were women in Bangladesh (Saha and Van Soest, 2013). Elliason et al. (2013), found the prior use of oral pills, injectables and emergency contraceptive pills to significantly influence future PPFP intentions.

# CHAPTER SIX

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

### Introduction

This chapter summarises the key study findings in relation to the study objectives and suggests recommendations to improve uptake of FP services in the Sunyani Municipality. Areas for further research are also indicated.



### 6.1 Conclusions

Knowledge of contraception was nearly universal, although variations were observed across the various methods. Contraceptive prevalence rate among currently married postpartum women attending child welfare clinic in Sunyani Municipality was 57.6%, representing the highest reported CPR (among postpartum women) yet in Ghana.

Calendar method was the most widely patronised method, followed by the injectables, and then the oral pill. The least patronised methods were sterilization, female condoms and the foam or jelly. Into the future, however, most postpartum mothers who intended using an FP method would prefer the injectables (26.4%), followed by the calendar method (22.3%) and then the oral pill (17.6%).

The need to space children was identified as the most important reason for using contraception, followed by the desire not to have any more children. In controlling for the effects of other factors, previous use of contraception and FP counselling during ANC remained as significant determinants of current contraceptive use among the study respondents. Method-related side effects and partner refusal were reasons ascribed for the non-use of contraception by respondents of the study. Findings of this study therefore provide insights into existing opportunities in repositioning FP education, especially among postpartum mothers in the Sunyani Municipality.

## 6.2 Recommendations

In view of the above findings, the following recommendations have been suggested:

### Health Facilities

The fact that a higher proportion of postpartum mothers intend using contraceptives in future and the intended shift from less reliable to more reliable methods, found in this study, there is the need to lay more emphasis on the modern methods in the FP education. Also, some elements of the GATHER framework need to be reinforced during contraceptive counselling to improve contraceptive uptake. There should be a lot of emphasis on the need to give clients the opportunity to choose a method and reassure them of the need to immediately see their service provider if there was anything unusual whilst on contraception.

### Municipal Health Directorate

The Municipal Health Directorate might need to think through ways of bringing partners of postpartum mothers on board (e.g. couple counselling) during FP education. Given the fact that discussing FP with the partner is an important determinant in the current use of contraception and the future intensions, reaching out to the partners would provide them a better understanding of the opportunities presented for adopting PPFP. Also, since family planning counselling during ANC is a facilitating reason for the use of contraception by postpartum mothers, every effort should be made to encourage couple counselling and should be actively explored by health workers as part of the routine ANC care for pregnant women.

### Further Research

Strategies to improve uptake of modern contraceptives especially long acting reversible contraceptives need to be explored.

## REFERENCES


Adegbola, O. & Okunowo, A. 2009. Intended postpartum contraceptive use among pregnant and puerperal women at a university teaching hospital. *Archives of gynecology and obstetrics,* 280**,** 987-992.

Ahmed, S. & Mosley, W. H. 2002. Simultinuity in the Use of Maternal Child Care and Contraceptives:Evidence from Developing Countries. *Demography 2002.*

Anzaku, A. S. & Mikah, S. 2014. postpartum resumption of sexual activity, sexual morbility and use of modern contraceptives among Nigeria women in Jos. *Ann Med Health Science Research* 4**,** 210-216.

Arrowsmith, M. E., Majeed, A., Lee, J. T. & Saxena, S. 2014. Impact of pay for performance on prescribing of long-acting reversible contraception in primary care: an interrupted time series study. *PLoS One,* 9**,** e92205.

Ashford, L. 2003. Unmet need for family planning: recent trends and their implications for programs. *Population Reference Bureau: policy brief*

Atuyambe, L., Mirembe, F., Tumwesigye, N. M., Anika, J., Kirumira, E. K. & Flaxelid, E. 2008. Adolescent and first time mothers' health seeking practices during and early motherhood in Wakiso district, central Uganda. *Reproductive health,* 5.

Bailey, C. E. 2010. Contraceptive Discontinuation and Side effects: Longitudinal Evidence from Southern Ghana. *British society for population studies annual conference.* Brighton, UK.

Balkus, J., Bosire, R., John-Stewart, G. & al, e. 2007. High Uptake of postpartum hormonal contraceptive among HIV-1-seropositive women in Kenya. *Sex Trans Disease,* 34**,** 25-29.

Barber, L. S. 2007. Family planning advice and postpartum contraceptive use among low -income women in Mexico. *International family planning perspectives.,* 33**,** 6-12.

Bawah, A. A. 2002. Spousal Communication and Family Planning Behavior in Navrongo: a longitudinal assessment. *Stud fam plan,* 33**,** 185-194.

Bocanegra, H. T., chang, R., Howell, M. & Darney, P. 2014. Interpregnancy intervals: impacts of postpartum contraceptive effectiveness and coverage. *American Journal of Obstetrics and Gynaecology,* 210**,** 311.e1-311.e8.

Bongaarts, J. & Potter, R. G. 1983. Behaviour, Biology and Fertility Behaviour: An Analysis of the Proximate Determinants. New York: Acadamic Press.

Borda, M. 2008 Family planning needs during the extended postpartum period in Utter Pradesh, India. *ACCESS-FP. HYPERLINK*.

Borda, M. & Winfery, M. 2006a. Family planning needs during extended postpartum period in Kenya. *ACCESS-FP. HYPERLINK*.

Borda, M. & Winfery, M. 2006b. Family planning needs during the extended postpartum period in Nigeria. *ACCESS-FP. HYPERLINK*.

Borda, M. R., Winfery, W. & Makaig, C. 2011. Return to sexual activity and modern family planninguse in extended postpartum period. *African Journal of Reproductive Health,* 14**,** 75-82.

Brown, M. 2007. When ancient meets modern: The relationship between postpartum non-susceptibility and contraception in Sub-Saharan Africa. *Journal of Biosocial Science,* 39**,** 493-515.

Crissman, H. P., Adanu, R. M. & Harlow, S. D. 2012. Women's Sexual Empowerment and Contraceptive use in Ghana. *Stud fam plan,* 43**,** 201-212.

Crossette, B. 2005. Reproductive Health and the millenium developmentgoals: the missing link. . *stud Fam Plann,* 10**,** 71-79.

Day, T., Raker, C. A. & Boardman, L. A. 2008. Factors associated with the provision of antenatal contraceptive counseling. *Contraception,* 78**,** 294-299.

Depineres, T., Blumenthal, P. D. & Diener-West, M. 2005. Postpartum contraception: the new Mexico pregnancy risk assessment monitoring system. *Contraception,* 72**,** 422-425.

Ekabua, J. E., Ekabua, K. J., Odusolu, P., Iklaki, C. U., Agan, T. U. & Etokidem, A. J. 2010. Factors associated with contraceptive use and initiation of coital activity after childbirth. *Open access journal of contraception,* 1**,** 85-91.

Elliason, S., Baiden, F., Quansah-Asare, G., Graham-Hayfron, Y., Bonsu, D., Phillip, J. & Awusabo-Asare, K. 2013. Factors influencing the intention of women in rural Ghana to adopt postpartum family planning. *Reproductive health,* 10**,** 34.

Faculty of Family Planning and Reproductive Health Care Guidance 2004. Contraceptive Choices for Breastfeeding women. *Fam Plan Reprod Health Care,* 30**,** 181-189.

Family Health International 360 2012. postpartum family planning. New Research Findings and Program Implications (progress report). North Carolina.

Gebresselassie, T. & Mishra, V. 2011. Spousal Agreement on Preferred Waiting Time on Next Birth in Sub-Saharan Africa. *Biosoc Science,* 10**,** 385-400.

Ghana National Population Council. 1994. National Population Policy.

Ghana Statistical Service 2012. 2011Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker, Accra, Ghana.

Ghana Statistical Service 2013. 2010 Population and Housing Census Regional Analytical Report, Brong Ahafo. Ghana.

Ghana Statistical Service, Ghana Health Service & ICF Macro 2009. Ghana Demographic and Health Survey 2008. Ghana.

Glasier, A. F., Logan, J. & McGlew, T. J. 1996. Who gives advice about about postpartum contraception. *contraception,* 53**,** 217-220.

Gribble, J. N. 2012. *Factsheet: Unmet need for family planning. Retrived from http://www.prb.org/Publications/Datasheets/2012/world-population-data-sheet/factsheetunmet-need.aspx* [Online]. Washinton D.C population reference Buraeu.

Gribble, J. N., Murray, N. & Menotti, E. P. 2008. Reconsidering childhood undernutrition: Can birth spacing make a difference? An analysis of the 2002-2003 El Salvador National Family Health Survey. *Maternal and child nutrition,* 5**,** 49-63.

Guttmacher Institute & United Nations Population Funds. 2010. *Sub-Saharan Africa: Facts on investing in Family Planning and Maternal and Newborn Health. Retrieved from http://www.unfpa.org/webdav/site/global/shared/additup/ factsheet-aiu-africa-en.pdf* [Online].

Hani, A., Moses, M., Copper, D., Morroni, C. & Hoffman, M. 2003. Informed choice-the timing of postpartum contraceptive initiation. *South African Medical Journal,* 93**,** 862-864.

Hotchkiss, D. R., Magnani, R. J., Rous, J. J., Azel mat, M., Mros, T. A. & Heikel, J. E. 1993. Effects of Maternal Child Health Service Utilization on Subsiquent Contraception Use in Morroco. *Journal of Biosocial Science,* 31**,** 145-165.

Hotchkiss, D. R., Rous, J. J., Seiber, E. E. & Berrutti, A. A. 2005. Is Maternal and Child Health Service Use a Casual Gateway to Subsiquent Contraceptive Use? A Multi- Country Study. Population Research and Policy Review 2005. .

Hubacher, D., Masaba, R., C., K. M. & Veena, V. 2013. Uptake of the levonorgestrel intrauterine system among recent postpartum women in Kenya: factors associated with decision making. *contraception* 88**,** 97-102.

Kamal, S. M. M. 2009. Adolescent motherhood in Bangladish. *XXVI IUSSP International population conference*.

Kariuki, W. D., Ntozi, J. & Rutaremwa, G. 2011. Determinants of Intention to Use Contraceptives in Postpartum Period among First Time Mothers in Nairobi, Kenya. *Sixth African Population Conference.* Ouagaduogou, Burkina Faso.

Kenya National Bureau of Statistics & ICF Macro 2010. Kenya Demographic and Health Survey 2008-09.

King, J. 2007. Contraception and lactation. *Journal of Midwifery and Womens Health,* 52**,** 614-620.

Mahmood, S. E., Srivastava, A., Shrotriya, V. P., Shaifali, I. & Mishra, P. 2011. Postpartum Contraceptive Use in Rural Bareilly. *Indian journal of Community Health,* 23.

Maja, T. M. M. & Ehlers, V. J. 2004. Contraceptive practices of women in Northern Tshwane, Gauteng pronce. *health SA Gesondheid,* 4**,** 40-51.

Marthe, K. M., Kasonia, K. K. & Mahio, A. K. 2011. Barriers to Adoption of Family Planning among Women i Eastern Democratic Republic of Congo. *African Journal of Reproductive Health,* 15.

McKaig, C. & Deller, B. 2006. After the fact: family planning for the postnatal period. *ACCESS-FP/JHPIEGO. HYPERLINK*.

Morhe, E. & Dalton, V. 2013. Contraceptive Uptake among Referred Postpartum Women in Komfo Anokye Teaching Hospital, Ghana. *International Conference on Family Planning.* Addis Ababa, Ethiopia.

Morhe, E. A. & Ankobea, F. 2011. Contraceptive Choices of New Family Planning Clients in Komfo Anokye Teaching Hospital, Kumasi Ghana. *2011 International Conference on family planning.*

Mwangi, A., Warren, C., Koskei, N. & Blanchard, H. 2008. Strengthening postnatal care and postpartum family planning in kenya. *Frontiers final report.* Washington DC: Population council and ACCESS-FP.

Namazzi, G. 2013. *Missed opportunities for modern family planning services among women attending child welfare clinics in Iganga/ Mayuge demograhic surveillance site.*

Newmann, S. J., Goldberg, A. B., Aviles, R., De Perez, O. M. & Foster-Rosales, A. F. 2005. Predictors of contraceptive knowledge and use among postpartum adolescents in El Salvador. *American Journal of Obstetrics and Gynaecology,* 92**,** 1391-1394.

Oni, G. A. & McCarthy, J. 1986. Use of Contraceptives for Child Spacing in Nigerian City. *stud fam plan,* 17**,** 165-171.

Peedicayil, A. 2003. Education for Contraceptive Use by Women after Child Birth: RHL Commentary. Geneva: World Health Organisation.

Rojnik, B., Kosmelji, K. & Andolsek-Jeras, L. 1995. Initiation of contraception postpartum. *Contraception,* 51**,** 75-81.

Ross, A. J. & Winfery, M. 2001. Contraceptive Use, Intention to Use and Unmet need During the Extended Postpartum Period. *International famil planning perspectives.,* 27**,** 20-27.

Ross, A. J. & Winfery, M. 2004. Unintended pregnancy among newly married couples in Shanghai. *International family planning perspectives.,* 30**,** 6-11.

Rossier, C. & Hellen, J. 2013. Family planning during postpartum period in Ouagadougou, Burkina Faso. *Population association of America annual meeting.* New Orleans.

Roy, T. K., Ram, F., Nangia, P., Saha, U. & Khan, N. 2003. can women's childbraering and contraceptive intentions predict contraceptive demand? findings from a longitudinal study in central India. *International family planning perspectives.,* 29**,** 25-31.

Rutstein, S. O. 2008. *Further evidence of the effects of preceding birth intervals on neonatal, infant and under five years mortality and nutritional status in developing countries: Evidence from the Demograghic and Health Surveys. Retrieved from http://www.measuredhs.com/pubs/pdf/WP41/WP41.pdf* [Online]. calverton, Maryland.: Macro International Inc.

Saha, U. R. & Van Soest, A. 2013. Contraceptive Use, Birth Spacing and Child Survival in Matlab Bangladesh. *Stud fam plan,* 44**,** 45-66.

Salway, s. & Nurani, s. 1998. Uptake of contraception during postpartum amenorrhea: understandings and preferences of poor, urban women in Bangladesh. *Social Science and Medicine,* 47**,** 899-909.

Shaaban, O. M. & Glasier, A. F. 2008. Pregnancy during breastfeeding in rural Egypt. *Contraception,* 77**,** 350-354.

Singh, S. & Darroch, J. E. 2012. Adding it up: Cost and Benefits of Contraceptive Services Estimates for 2012 New York: Guttmacher Institude and United Nations Population Fund.

Singh, S., Moore, A. M., Bankole, A., Mirembe, F., Wulf, D. & Prada, E. 2006. *Unintended pregnancy and induced abortion in Uganda: causes and cosequences. Retrieved from http://www.guttmacher.org/pubs/2006/11/27/ugandaUPIA.pdf* [Online]. New York. Guttmacher Institute.

Smith, K., Van der Spuy, Z., Cheng, L., Elton, R. & Glasier, A. 2002. Is postpartum contraceptive advice given antenatally of value?. *Contraception,* 65**,** 237-243.

Speizer, I. S., Fotso, J. C., Okigbo, C., Faye, M. C. & Seck, C. 2013. Influence of Integrated Services on Postpartum Family Planning Use: A cross sectional survey from Urban Senegal. *BioMed Central Public health,* 13**,** 752.

Sunyani Municipal Health Directorate 2014. First Quarter Report.

Sunyani Regional Hospital 2014. First Quarter Report. Sunyani.

Tehrani, F. R., Farahani, F. K. A. & Hashemi, M. S. 2001. Factors influencing contraceptive use in Tehran. *Family practice,* 18**,** 204-208.

Trussell, J. & Santow, G. 1991. "Is the Bellagio consensus statement on the use of contraception sound public-health policy? *Health Transition Review,* 1**,** 105-107.

Uganda Bureau of Statistics & IFC International. 2012. *Ugandan Demographic Health Survey 2011. Retrieved from http://www.measuredhs.com/pubs/pdf/FR264/FR264.pdf* [Online].

United Nations 2011. The Millenium Development Goals Report. Retrieved from www.un.org/milleniumgoals/11-MDG%20Report-EN.pdf.

United Nations Population Division. 2005. *World population prospects:The 2004 Revision. Retrieved from http://www.un.org/esa/population/publications/wpp2004/2004Highlights-final/revised.pdf* [Online]. New York.

Vernon, R. 2008. Meeting the family planning needs of postpartum women. *Frontiers program brief,* 10.

World Health Organisation 1999. The World Health Organisation multinational study of breast-feeding and lactational amenorrhoea, III. Pregnancy during breastfeeding. *Fertility and Sterility,* 72**,** 431-440.

World Health Organisation. 2012. *family planning. Retrieved from http://www.who.int/mediacentre/factsheets/fs351/en/index.html* [Online].

World Health Organisation. 2013. *Family planning Factsheet. Retrieved fromhttp://www.who.int/mediacentre/factsheet/fis351/en/* [Online].

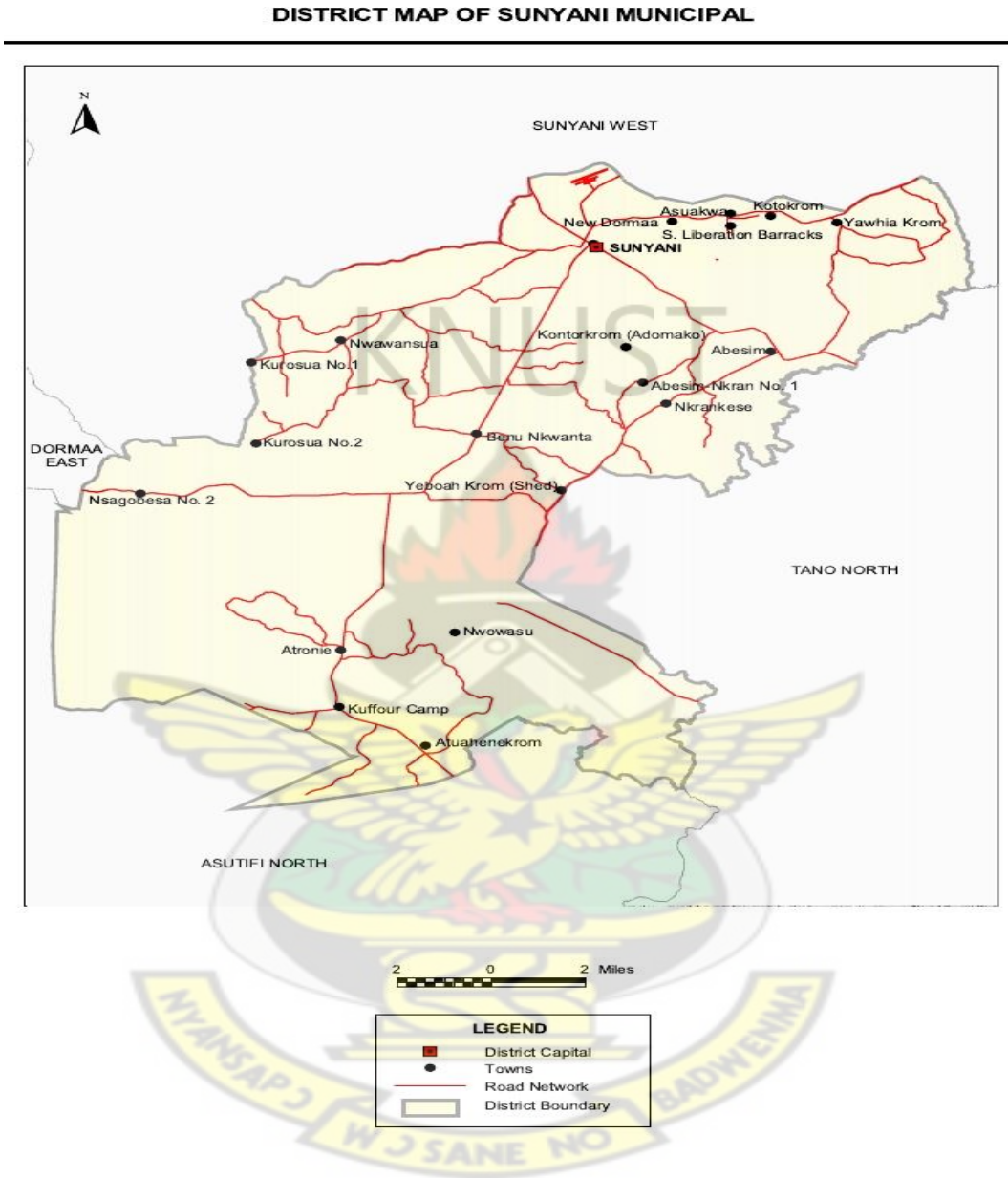
Yilmazel, G. & Balci, E. 2013. Preference and related factors for for postpartum contraception in pregnant women. *Iran J reprod med,* 11**,** 801-806.

Zeira, A. & Tsui, A. O. 2001. The Relationship Between Prenatal Care and Subsiquent Modern Contraceptive Use in Bolivia, Egypt and Thailand. *African Journal of Reproductive Health,* 5**,** 68-82.

Zhu, B. P., Rolfs, R. T., Nangle, B. E. & Horan, J. M. 1999. Effects of the Interval between pregnancies on perinatal outcomes. *N Engl J Med*, 340**,** 589-594.

# APPENDICES

## Appendix A: District Map of Sunyani Municipal



# Appendix B: Data collection questionnaire

**SECTION ZERO: IDENTIFICATION INFORMATION**

STUDY ID [ ][ ][ ] **SSID**

DISTRICT ……

FACILITY NAME / CODE …….. [ ][ ] **FACODE**

DATE OF INTERVIEW **D D M M Y Y Y Y** [ ][ ][ ][ ][2][0][1][4] **DATE**

INTERVIEWER NAME / CODE …….. [ ][ ]

INTERVIEW START TIME [ ][ ] . [ ][ ] GMT **STIME**

INTERVIEW END TIME [ ][ ] . [ ][ ] GMT **EDTIM**



**SECTION ONE: RESPONDENT BACKGROUND**

**(THICK (√) THE APPROPRIATE RESPONSES, AND WRITE IN THE BOXES WHERE A NUMBER IS REQUIRED)**

1.1 How old are you? [ ][ ] **AGE**

1.2 What is your level of education? **EDUCAT**

| | | | |
|---|---|---|---|
| None | 1 | Secodary | 4 |
| Primary | 2 | Post Sec/Higher | 5 |
| Middle/JSS/JHS | 3 | Other (specify) | 6 |

……

1.3 What do you do for a living (occupation)? **OCCUP**

| | | | |
|---|---|---|---|
| Student | 1 | Farmer/other agric | 5 |
| Unemployed | 2 | Other informal employment | 6 |
| Home keeper | 3 | Public servant | 7 |
| Trader | 4 | Other formal employment | 8 |

1.4 What is your marital status? **MARISTAT**

| | | | |
|---|---|---|---|
| Single | 1 | Divorced | 4 |
| Married | 2 | Separated | 5 |
| Co-habiting | 3 | Widowed | 6 |

1.5 In which locality or suburb do you currently live? **RESIDENC**

| | | | | | |
|---|---|---|---|---|---|
| DUMASUA AREA | 1 | PENKWASI | 9 | BOSUMA MARKET | 17 |
| FIAPRE AREA | 2 | ZONGO | 10 | NEW DORMAA | 18 |
| BERLIN TOP AREA | 3 | RESIDENCY AREA | 11 | BERKO | 19 |
| BAKONUABA | 4 | SSNIT | 12 | ABESSIM | 20 |
| ESTATES | 5 | MAYFAIR | 13 | KOTOKROM | 21 |
| AREA ONE | 6 | AIRPORT | 14 | YAWHIMA | 22 |
| AREA TWO | 7 | ODUMASI | 15 | MAGAZINE | 23 |
| AREA THREE | 8 | NKWABENG | 16 | AREA FOUR | 24 |
| | | | | OTHER (specify) | 25 |

……

1.6 When you got pregnant with your last child did you want to be pregnant at the time?

YES [1]

NO [2]

1.7 Where did you attend antenatal (ANC) during your last pregnancy?

……

1.8 How many living children do you currently have? [ ][ ] children **PARIT**

**SECTION TWO: CONTRACEPTIVE UTILIZATION**

2.1 Do you know ways/methods to delay or avoid pregnancy (family planning)? **AVOIDPRE**

Yes [1]

No [2] **IF NO SKIP TO 2.10**

2.2 Do you know any of these family planning methods?

| | | **YES** | **NO** | |
|---|---|---|---|---|
| a | Female sterilization | [1] | [2] | **KFEMSTER** |

| | | | | |
|---|---|---|---|---|
| b | Male sterilization | 1 | 2 | **KMALSTER** |
| c | Pill | 1 | 2 | **KPILLMET** |
| d | IUD | 1 | 2 | **KIUDMETH** |
| e | Injectables | 1 | 2 | **KINJECTA** |
| f | Implants | 1 | 2 | **KIMPLANT** |
| g | Female condom | 1 | 2 | **KFEMCON** |
| h | Male condom | 1 | 2 | **KMALCON** |
| i | Diaphragm | 1 | 2 | **KDIAPHRA** |
| j | Form or jelly | 1 | 2 | **KJELL** |
| k | Calendar method | 1 | 2 | **KCALENDA** |
| l | Withdrawal | 1 | 2 | **KWITDRA** |
| m | Lactation Amenorrhea Method | 1 | 2 | **KLAM** |
| n | Emergency contraception | 1 | 2 | **KEMRCON** |

2.3 Have you or your partner ever used any of these methods to delay or avoid pregnancy? **EVRUSET**

| | | **YES** | **NO** | |
|---|---|---|---|---|
| a | Female sterilization | 1 | 2 | **UFEMSTER** |
| b | Male sterilization | 1 | 2 | **UMALSTER** |
| c | Pill | 1 | 2 | **UPILLMET** |
| d | IUD | 1 | 2 | **UIUDMETH** |
| e | Injectables | 1 | 2 | **UINJECTA** |
| f | Implants | 1 | 2 | **UIMPLANT** |
| g | Female condom | 1 | 2 | **UFEMCON** |
| h | Male condom | 1 | 2 | **UMALCON** |
| i | Diaphragm | 1 | 2 | **UDIAPHRA** |
| j | Form or jelly | 1 | 2 | **UJEY** |
| k | Calendar method | 1 | 2 | **UCALENDA** |
| l | Withdrawal | 1 | 2 | **UWITDRA** |
| m | Lactation Amenorrhea Method | 1 | 2 | **ULAM** |
| n | Emergency contraception | 1 | 2 | **UEMRCON** |

**IF EVER USED OR CURRENTLY USING ANY METHOD, ASK THE FOLLOWING QUESTIONS**

2.4 How many months/years ago did you first use any of the methods below? **YRSFISUSE**

| | | **MONTHS** | |
|---|---|---|---|
| a | Female sterilization | | **MFEMSTER** |
| b | Male sterilization | | **MMALSTE** |
| c | Pill | | **MPILLMET** |
| d | IUD | | **MIUDMET** |
| e | Injectables | | **MINJECTA** |
| f | Implants | | **MIMPLANT** |
| g | Female condom | | **MFEMCON** |
| h | Male condom | | **MMALCON** |
| i | Diaphragm | | **MDIAPHRA** |
| j | Form or jelly | | **MJELL** |
| k | Calendar method | | **MCALEND** |
| l | Withdrawal | | **MWITDRA** |
| m | Lactation Amenorrhea Method | | **MLAM** |
| n | Emergency contraception | | **MEMRCON** |

How many living children did you have at that time, if any? **PASTPARIT**

2.5 [ ][ ] children

2.6 Before you got pregnant with this child (child brought to child welfare clinic) did you or your partner use any of these methods to avoid or delay pregnancy? **USEB4CHIL**

| | | **YES** | **NO** | |
|---|---|---|---|---|
| a | Female sterilization | 1 | 2 | **PFEMSTER** |
| b | Male sterilization | 1 | 2 | **PMALSTER** |

| | | | | |
|---|---|---|---|---|
| c | Pill | 1 | 2 | **PPILL** |
| d | IUD | 1 | 2 | **PIUD** |
| e | Injectables | 1 | 2 | **PINJECTAB** |
| f | Implants | 1 | 2 | **PIMPLANT** |
| g | Female condom | 1 | 2 | **PFEMCOND** |
| h | Male condom | 1 | 2 | **PMALCON** |
| i | Diaphragm | 1 | 2 | **PDIAPHRA** |
| j | Form or jelly | 1 | 2 | **PJELL** |
| k | Calendar method | 1 | 2 | **PCALENDA** |
| l | Withdrawal | 1 | 2 | **PWITDRA** |
| m | Lactation Amenorrhea Method | 1 | 2 | **PLAM** |
| n | Emergency contraception | 1 | 2 | **PEMRCON** |

**IF YES FOR AT LEAST ONE METHOD**, where did you mainly obtain the method? **PMETDPLA**

| | | | |
|---|---|---|---|
| Hospital/clinic | 1 | Pharmacy/drug store | 3 |
| FP clinic/worker | 2 | Other(specify) | 4 |

.....

2.7 Are you currently using any of these methods to delay or avoid pregnancy? **CURENTUS**

| | | YES | NO | |
|---|---|---|---|---|
| a | Female sterilization | 1 | 2 | **CFEMSTER** |
| b | Male sterilization | 1 | 2 | **CMALSTER** |
| c | Pill | 1 | 2 | **CPILL** |
| d | IUD | 1 | 2 | **CIUD** |
| e | Injectables | 1 | 2 | **CINJECTA** |
| f | Implants | 1 | 2 | **CIMPLANT** |
| g | Female condom | 1 | 2 | **CFEMCON** |
| h | Male condom | 1 | 2 | **CMALCON** |
| i | Diaphragm | 1 | 2 | **CDIAPHRA** |
| j | Form or jelly | 1 | 2 | **CJELL** |
| k | Calendar method | 1 | 2 | **CCALENDA** |
| l | Withdrawal | 1 | 2 | **CWITDRA** |
| m | Lactation Amenorrhea Method | 1 | 2 | **CLAM** |
| n | Emergency contraception | 1 | 2 | **CEMRCON** |

2.8 **IF YES FOR AT LEAST ONE METHOD**, where did you mainly obtain the method? **CMETDPLA**

| | | | |
|---|---|---|---|
| Hospital/clinic | 1 | Pharmacy/drug store | 3 |
| FP clinic/worker | 2 | Other(specify) | 4 |

.....

2.9 **IF NO IN 2.6 AND 2.7**, why are you not using any method to delay or avoid pregnancy? **REASNOFP**

| | | | |
|---|---|---|---|
| Religious beliefs | 1 | Abstenance | 5 |
| Partner refuses | 2 | Amenorrheoic | 6 |
| Expensive | 3 | Do not wish to avoid pregnancy | 7 |
| Side effect | 4 | Other(specify) | 8 |

2.10 Would you consider using family planning in future to delay or prevent pregnancy? **FUTFPUSE**

| | |
|---|---|
| YES | 1 |
| NO | 2 |
| DK | 3 |

**IF YES OR DON'T KNOW IN 2.10**

2.11 Which of these methods would you consider using in future to delay or prevent pregnancy? **FUTMETHD**

| | | YES | NO | |
|---|---|---|---|---|
| a | Female sterilization | 1 | 2 | **FFEMSTER** |
| b | Male sterilization | 1 | 2 | **FMALSTER** |
| c | Pill | 1 | 2 | **FPILL** |
| d | IUD | 1 | 2 | **FIUD** |
| e | Injectables | 1 | 2 | **FINJECTAB** |
| f | Implants | 1 | 2 | **FIMPLANT** |
| g | Female condom | 1 | 2 | **FFEMCOND** |

| | | | | |
|---|---|---|---|---|
| h | Male condom | 1 | 2 | **FMALCON** |
| i | Diaphragm | 1 | 2 | **FDIAPHRA** |
| j | Form or jelly | 1 | 2 | **FJELL** |
| k | Calendar method | 1 | 2 | **FCALENDA** |
| l | Withdrawal | 1 | 2 | **FWITDRA** |
| m | Lactation Amenorrhea Method | 1 | 2 | **FLAM** |
| n | Emergency contraception | 1 | 2 | **FEMRCON** |

**SECTION THREE: BARRIERS AND FACILITATORS OF CONTRACEPTIVE UPTAKE**

3.1 Do you discuss family planning with your husband or co-habiting partner? **FPWITHUS**

| | | | |
|---|---|---|---|
| Yes, often | 1 | Hardly | 3 |
| Yes, occasionally | 2 | Never | 4 |

3.2 How many times did you attend ANC(antenatal) whiles you were pregnant with your last child? **RECORD ACTUAL NUMBER, REFER TO ANC CARD IF AVAILABLE** **ANCVISITS**

[ ][ ]

3.3 **IF AT LEAST ONE ANC**, was FP part of the issues dicussed at any time during the ANC? **FPINANC**

| | |
|---|---|
| Yes | 1 |
| No | 2 |

EXPRESS YOUR CANDID OPINION ON THESE STATEMENTS

| | **STATEMENT** | **YES** | **NO** | **DK** | |
|---|---|---|---|---|---|
| 3.4 | A woman who is breastfeeding can become pregnant | 1 | 2 | 3 | **BFEEDPRE** |
| 3.5 | A woman should start family planning shortly after delivery to avoid getting pregnant | 1 | 2 | 3 | **PPFPAVOID** |
| 3.6 | Antenatal counseling on family planning made me take up family planning after delievery | 1 | 2 | 3 | **ANCLEDFP** |
| 3.7 | Contraception encourages women to be promiscuous | 1 | 2 | 3 | **FPROMISC** |
| 3.8 | Family planning enables women to have control over their reproductive health | 1 | 2 | 3 | **CONTREPR** |
| 3.9 | Family planning is woman's business and men should not be worried about it | 1 | 2 | 3 | **WOBUSNES** |
| 3.10 | Other family members do not have to know that I use contraceptives | 1 | 2 | 3 | **FAMCONT** |
| 3.11 | Did the health workers who spoke to you about family planning tell you that there are many methods? | 1 | 2 | 3 | **DIFFMETH** |
| 3.12 | My partner encourages me to take up family planning | 1 | 2 | | **PARTENCF** |

| | | **YES** | **NO** | **NA** | |
|---|---|---|---|---|---|
| 3.13 | Attitudes of health workers discouraged me from seeking family planning services | 1 | 2 | 3 | **ATTITUDE** |
| 3.14 | Side effects discouraged me from using family planning | 1 | 2 | 3 | **SIDEFFECT** |
| 3.15 | Did the health worker give you a lot of information on the family planning services available? | 1 | 2 | 3 | **INFOFPSER** |
| 3.16 | Were you told of side effects associated with the family planning method you are using? | 1 | 2 | 3 | **SIDEFFECT** |
| 3.17 | Did you give your child any food (solid or liquid) in the first six months besides breastmilk? | 1 | 2 | 3 | **EXCLUSIVB** |

| | | **YES** | **NO** | **NA** | |
|---|---|---|---|---|---|
| 3.18 | When you attended antenatal, did the health workers speak to you about contraceptives or family planning? | 1 | 2 | 3 | **CONTRANC** |
| 3.19 | Were you counselled about family planning during your postnatal, that is the 40 days visit to a health facility? | 1 | 2 | 3 | **CONTRPNC** |
| 3.20 | Since you started attending child welfare clinic,have the health workers spoken to you about contraception | 1 | 2 | 3 | **CONTRCW** |

3.21 How old (in months) was your child when he/she started drinking water **CHLDWAT**

**WRITE AGE IN MONTHS** [ ][ ]

3.22 What are the three most important factors that will motivate you to use contraception? **MOTIVAT**

| | | | | |
|---|---|---|---|---|
| Resumption of menses | 1 | Want no more kids | 5 | |
| Resumption of sex | 2 | To space my children | 6 | |
| Medical reasons | 3 | Other (specify) | 7 | |
| Insistence of partner | 4 | …… | | |

3.23 What three important factors would discourage you from using contraception? **DISCOURA**

| **RESPONDENT HAS EVER USED (INCLUDING CURRENT USERS)** | | **RESPONDENT HAS NEVER USED** | |
|---|---|---|---|
| Fear of side effects | 1 | Perceived side effect | 1 |
| Previous method failure | 2 | Perceived method failure | 2 |
| Other past experiences | 3 | Religious reasons | 3 |
| Other (specify) | 4 | Partner refusal | 4 |
| …… | | Other (specify) | |

**IF RESPONDENT USES CONTRACEPTION CONTINUE, ELSE END INTERVIEW AND THANK HER**

| | | YES | NO | |
|---|---|---|---|---|
| 3.24 | Do the family planning service providers usually welcome you with a smile? | 1 | 2 | **WELRECEI** |
| | Did the family planning providers engage you in a chat that made you feel at home? | 1 | 2 | **FPCHAT** |
| 3.25 | Do the family planning service providers usually offer to assist you when you visit for a service? | 1 | 2 | **OFFERASS** |
| 3.26 | Do the family planning service providers usually provide you with a lot of information about the available services? | 1 | 2 | **PROVINFO** |
| 3.27 | Did the family planning providers give you a chance to choose a family planning method of your choice? | 1 | 2 | **CHOSEME** |
| 3.28 | Did the family planning provider examine you (for example check blood pressure, vaginal examination for IUD, etc.) | 1 | 2 | **FPEXAMIN** |
| 3.29 | Did the family planning service providers give you information on your chosen contraceptive method? | 1 | 2 | **INFOMETH** |
| 3.30 | Did the service provider asked you to return for a review or report if you notice anything unsusual | 1 | 2 | **REVIEW** |

THANK YOU

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
**COLLEGE OF HEALTH SCIENCES**

SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Our Ref: CHRPE/AP/357/14 20th October, 2014.

Miss Caroline Wuni
Department of Community Health
School of Medical Sciences
KNUST- Kumasi.

Dear Madam,



**LETTER OF APPROVAL**

*Protocol Title:* ***"Contraceptive Uptake among Postpartum Women in Sunyani Municipality, Ghana."***

*Proposed Site:* ***Regional Hospital, Sunyani Municipal Health Directorate (Child Welfare Centre), SDA Hospital, Abesim Health Centre, Monica's Maternity Home, and Florence Maternity Home – Sunyani Municipality, Brong Ahafo Region.***

*Sponsor:* ***Principal Investigator.***

Your submission to the Committee on Human Research, Publications and Ethics on the above named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 10th April, 2014 from the Regional Hospital, Sunyani (study site) indicating approval for the conduct of the study in the Hospital.
- A notification letter of , 2014 from the Sunyani Municipal Health Directorate (study site) indicating approval for the conduct of the study in the Municipality.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Proposal.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, renewable annually thereafter. The Committee may however, suspend or withdraw ethical approval at anytime if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you Madam, for your application.

Yours faithfully,

Osomfuor Prof. Sir J. W. Acheampong MD, FWACP
**Chairman**

Room 7 Block J, School of Medical Sciences, KNUST, University Post Office, Kumasi, Ghana
Phone: +233 3220 63248 Mobile: +233 20 5453785 Email: chrpe.knust.kath@gmail.com / chrpe@knust.edu.gh

In case of the reply the number and the date of this letter should be quoted.

GHANA HEALTH SERVICE
MUNICIPAL HEALTH DIRECTORATE
P. O. BOX 311
SUNYANI

My Ref. No GHS/MHD/PJ 57

17TH April 2014

Your Ref. No.....

E- Mail Address:

Mhdghssun@yahoo.com

Tel: +03520-23438

THE HEAD OF DEPARTMENT
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF COMMUNITY HEALTH
KNUST



## LETTER OF ACCEPTANCE

## NAME: CAROLINE WUNI – MPH HEALTH SERVICES PLANNING AND MANAGEMENT STUDENT

The above named student of your institution has duly approached us for a research on "**Contraceptive uptake among post-partum women in the Sunyani Municipality".**

I wish to inform you that she would be given assistance to enable her complete the research.

Thank you.

**DR. PAULINA C. APPIAH (MRS.)**
**MUNICIPAL DIRECTOR OF HEALTH SERVICES**
**SUNYANI**

In case of reply
The number and date of this letter
should be quoted

GHANA HEALTH SERVICE
Your Health - Our Concern

GHANA HEALTH SERVICE
REGIONAL HOSPITAL
P. O. BOX 27
SUNYANI-B/A

10TH APRIL , 2014

My Ref: GHS/BA/RHS/RES/90
Your Ref No: .....

E – Mail Address:
rhsbar@gmail.com

Telephone; 03520– 28460/28461
Fax: 03520- 24012



KWAME NKRUMAH UNIVERSITY SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES
SCHOOL MEDICAL SCIENCES
DEPARTMENT OF COMMUNITY HEALTH

RE: LETTER OF INTRODUCTION

With regard to your letter dated 3rd April, 2014 with a reference **No. SMS/COH/R/VoL.1,** I write to grant you my consent to carry out your study in the Brong Ahafo Regional Hospital, Sunyani.

You are entreated to abide by all the rules and regulation governing the facility during your research period.

It is my hope, you would carry out your study successfully in this establishment without any hindrance.

Thank you.

DR. JACOB ABEBRESE
MEDICAL DIRECTOR

CC : Head of Deparment
Ms. Carloline Wuni