

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI, GHANA
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF POPULATION, FAMILY & REPRODUCTIVE
HEALTH**

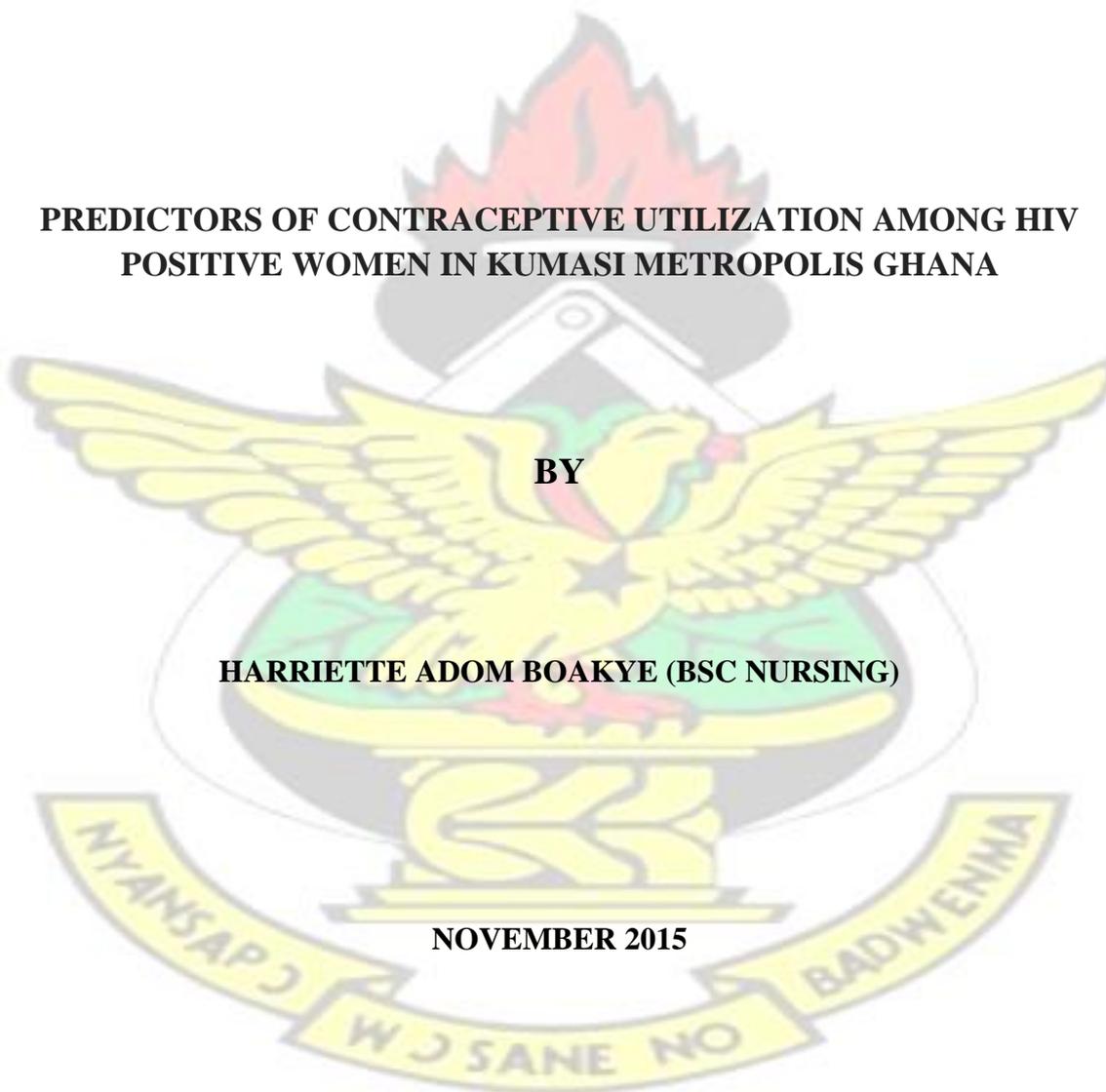
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**PREDICTORS OF CONTRACEPTIVE UTILIZATION AMONG HIV
POSITIVE WOMEN IN KUMASI METROPOLIS GHANA**

BY

HARRIETTE ADOM BOAKYE (BSC NURSING)

NOVEMBER 2015



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**A THESIS SUBMITTED TO THE DEPARTMENT OF POPULATION,
FAMILY & REPRODUCTIVE HEALTH
COLLEGE OF HEALTH SCIENCE, SCHOOL OF PUBLIC HEALTH, IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF PUBLIC HEALTH IN POPULATION,
FAMILY & REPRODUCTIVE HEALTH**

NOVEMBER 2015

DECLARATION

Except for the specific references which have been duly acknowledged, I declare that this work is the result of my own field research and it has not been submitted either in part or whole for any other degree elsewhere.

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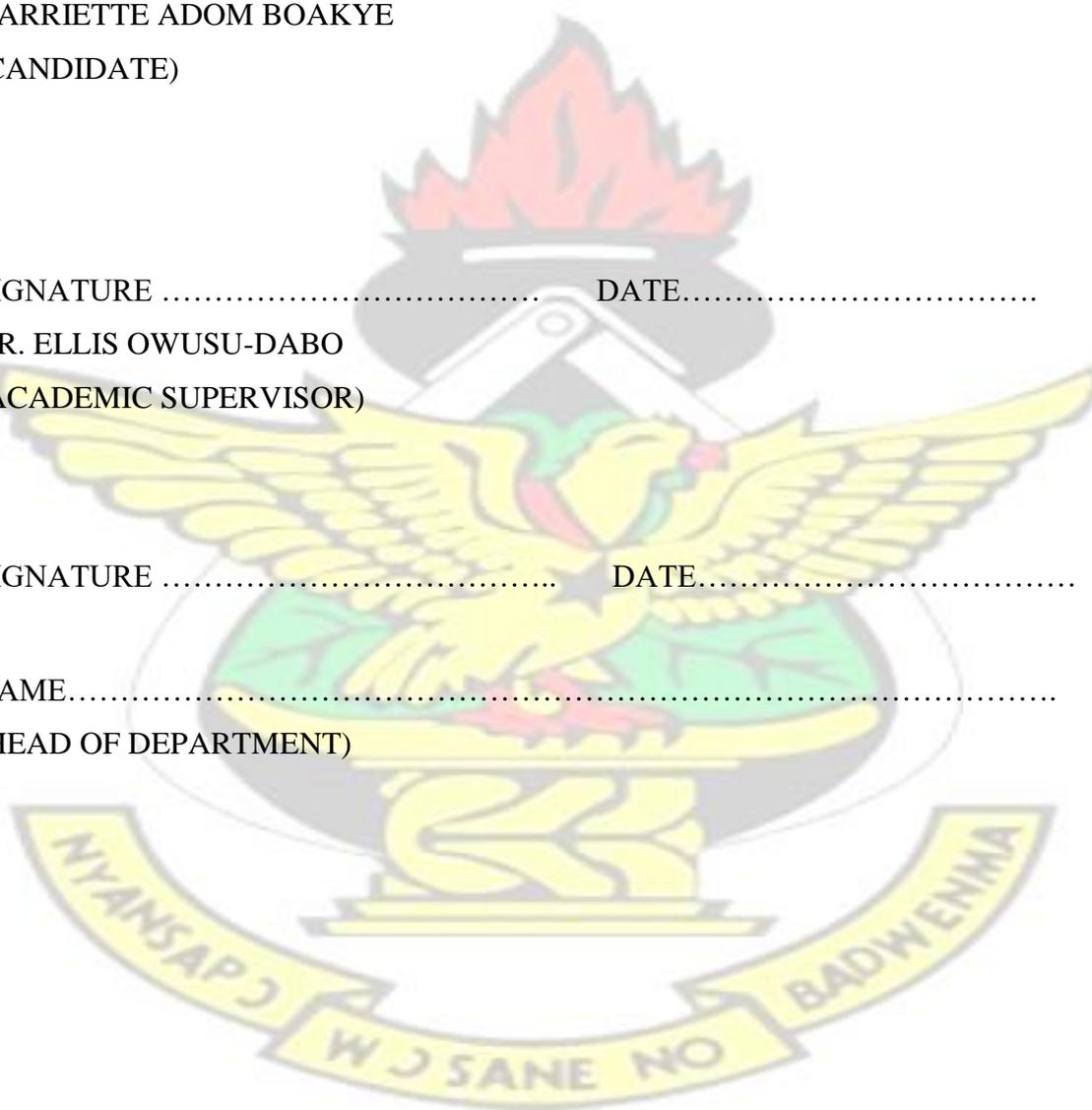
HARRIETTE ADOM BOAKYE
(CANDIDATE)

SIGNATURE DATE.....

DR. ELLIS OWUSU-DABO
(ACADEMIC SUPERVISOR)

SIGNATURE DATE.....

NAME.....
(HEAD OF DEPARTMENT)



ABSTRACT

Introduction: Preventing unintended pregnancy among HIV-positive women through effective contraception constitutes a critical and cost-effective approach to primary prevention of mother-to-child transmission of HIV and is a global public health priority for addressing the desperate state of maternal and child health in HIV hyper-endemic settings. This strategy is however undervalued and less used throughout sub Saharan Africa. This study was conducted in order to identify the predictors of contraceptive users among HIV positive women in the Kumasi metropolis.

Methodology: A multistage sampling technique was employed in this study. The first stage involved a simple random sampling of the ART centres and the second stage involved a systematic random sampling of respondents for the study. This is a cross-sectional study and it employed both qualitative and quantitative methods and involved

414 randomly selected HIV positive women receiving treatment at the Suntreso Government Hospital, a public hospital and SDA hospital, affiliated to the Christian Health Association of Ghana (CHAG) ART centres in the Kumasi Metropolis. A multistage sampling technique was used in this study. Quantitative data was gathered with the use of semi-structured questionnaires while qualitative data made use of Focus group discussion guides. Quantitative data was analyzed at the univariate and multivariate levels using STATA software version 11 used whereas the qualitative data was analyzed thematically.

Results: This study revealed a high awareness of the knowledge of contraceptives among HIV positive women. This however did not translate to its usage as only 32% were using contraceptives. The level of unmet need of contraception was 37.8%. Condom (both male and female) was the most cited contraceptive heard, followed by the pill and 47.8% of the

women used condoms with their partners. Use of family planning services differed significantly among HIV positive clients from public and private health facilities (43.9% versus 15%; $p < 0.001$). The known predictors of contraceptive usage among public facilities were marital status and religion. Being married or cohabitating was associated with increased odds of using a contraceptive (OR=6.0; $p < 0.001$ and OR=15.5; $p < 0.01$ respectively). Among private facilities, the known predictors of contraceptive usage were religion, length of relationship and partner's HIV status. The known predictors of condom use were religion, education and marital status of HIV positive woman. Having a partner with a positive sero-status increased the likelihood of using contraceptives among HIV positive women (OR=8.4; $p < 0.05$).

Conclusion: The increased awareness and appreciation of the importance of contraceptives did not translate to usage. Use of contraceptives among HIV positive women was low. An improvement in educational intentions to improve utilization should be incorporated into the general healthcare and support program at ART centers. Contraceptive utilization among HIV positive women is barred by interplay of sociodemographic, socio-cultural and relationship issues. The study recommends an effective intervention, targeted at resolving these barriers to improve contraceptive usage among HIV positive women.

DEDICATION

This work is dedicated to my dear husband **DR PHILIP ANDERSON** for his steadfast love and support throughout this project and other endeavours.

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I will bless the Lord at all times; His praise shall continually be in my mouth, for indeed He has done great things. I wish to express my deepest gratitude to the Almighty God whose mercy and grace has brought me this far.

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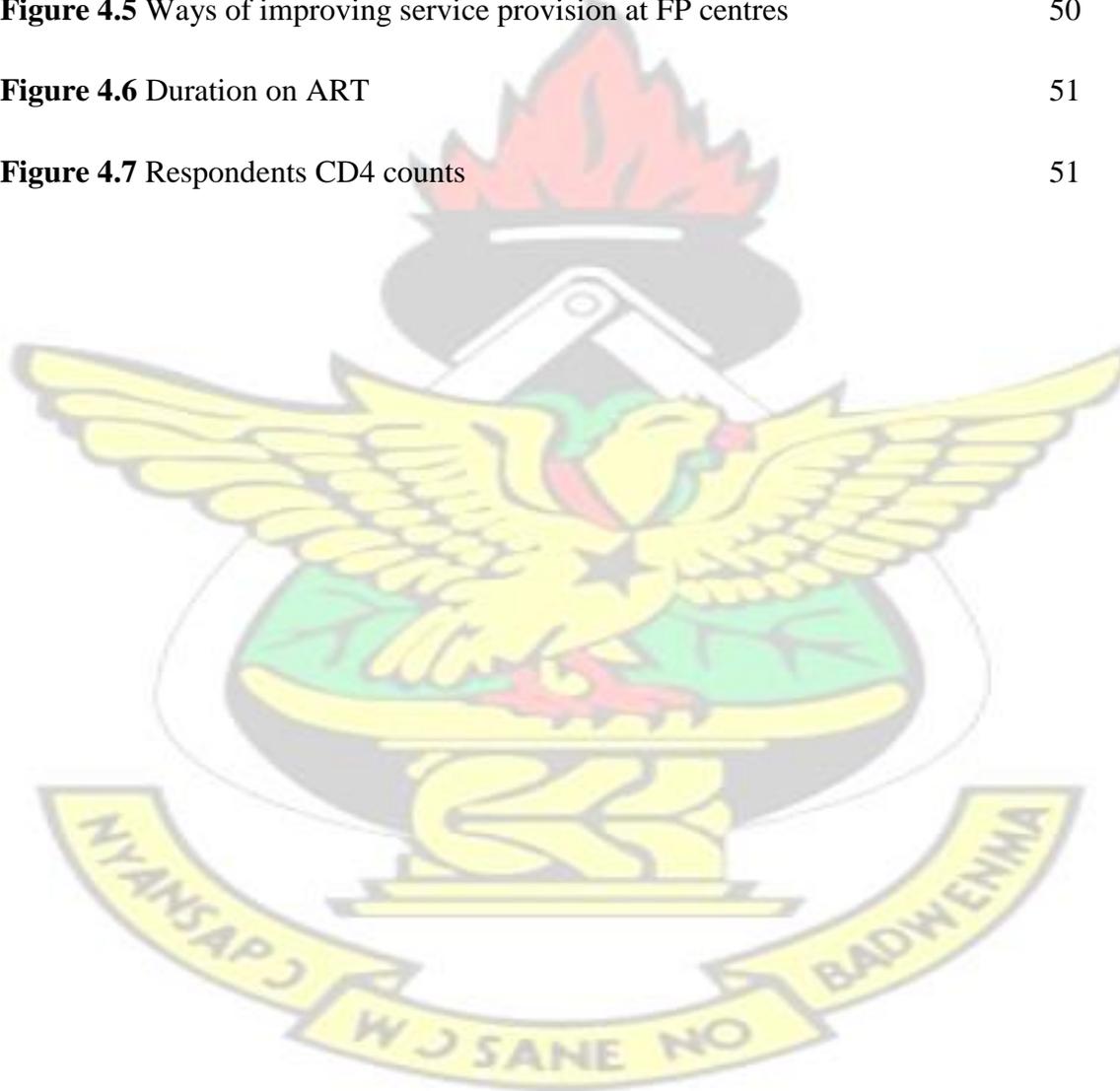
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ABBREVIATIONS /ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral therapy
ARVs	Antiretroviral
CHPRE	Committee for Human and Population Research
CHAG	Christian Health Association of Ghana
DHS	Demographic Health Survey
FP	Family Planning
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GSS	Ghana Statistical Service
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counseling
IUD	Intra Uterine Device
KATH	Komfo Anokye Teaching Hospital
KMHD	Kumasi Metropolitan Health Directorate
MOH	Ministry of Health
MCHH	Maternal and Child Health Hospital
MTCT	Mother-to-child transmission of HIV
NACP	National AIDS Control Programme
OC	Oral Contraceptive
PMTCT	Prevention of Mother To Child Transmission
STI	Sexually Transmitted Infection
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children Emergency Fund
UNFPA	United Nations Population Fund
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.0 Background

HIV/AIDS remain a major cause of death worldwide with the majority coming from sub-Saharan Africa. AIDS has killed more than 25 million people since 1981 and an estimated 33.2 million (31.4 million – 35.3 million) people are living with HIV/AIDS worldwide with 2.5 million of them from sub-Saharan Africa (UNAIDS, 2011). In 2007, 2.1 million HIV related deaths were recorded with 1.6 million (76%) from Sub Saharan Africa (NACP, 2010). In Ghana, HIV prevalence among adults in 2010 was 1.5% and same for 2011 (Ghana AIDS Commission, 2010). An estimated 267,069 persons made up of 95,206 males and 126,735 females were living with HIV as at 2010 and the prevalence of HIV/AIDS among antenatal clients was 2.0% (NACP, 2011). HIV remains the leading cause of death among women in reproductive age and HIV infection among children has mainly been through Mother-To-Child-Transmission (MTCT). Nearly 16 million women are living with HIV with 1.4 million pregnant women at risk of passing along HIV to their child each year (Beagle, 2010).

The prevalence of HIV is known to be higher in women than men (UNICEF, 2012). Women of reproductive age account for 60% of all adult HIV infections and 75% of infections among people 15–24 years old (UNAIDS, 2010). In Ghana, the level of HIV infection in 2009 was nearly 3 times higher among young women (1.3%) than young men (0.5%) and in 2010, new infections of HIV among females was higher than males (7,039vs 5,852) number of new infections (NACP, 2010; 2011). More to this, nearly 80% of the world's 15.5 million HIV-infected women live in sub-Saharan Africa, where heterosexual intercourse is the primary mode of HIV transmission (UNAIDS, 2008). Research

over the years has shown that most of the women living with HIV/AIDS are in their reproductive years and many of them anticipate marriage and childbearing (Page, 2001; Baylies, 2002), making it very plausible, a possible transmission of HIV from mothers to babies in this region.

In 2008, the number of children newly infected with HIV was approximately 430,000, of which 90 percent were infected through mother-to-child transmission (MTCT) (WHO, 2010). In 2007, it was estimated that about 350,000 new paediatric HIV infections occurred in resource limited settings in the world and that 90% of these infections were sub-Saharan Africa (UNAIDS, 2008). In Ghana it is currently estimated that about 30,401 children are living with HIV due to MTCT (Ghana Aids Commission, 2012). The effects of HIV infection in children are very devastating. Without intervention it was estimated that more than 50% of HIV infected children will die before second birthday (WHO, 2003). Even with intervention HIV infected children still suffer physical, social and emotional consequences of HIV infection.

Fertility intentions of HIV-infected women are affected by the same community and cultural norms and are generally similar to those of uninfected women (Cooper et al, 2005). Apart from societal expectations for women to marry and bear children at certain ages, many HIV infected women also want to ensure that their rights to marry and reproduce are duly exercised in spite of the high risks that may be associated with being infected (Adair, 2007). These fertility expectations however have some implications on super infections and mother to child transmission of HIV/ AIDS. Each year, HIV positive women experience over 1.4 million pregnancies (WHO, 2009), of which an estimated 50–84% are unintended (Laher et al, 2009; RoCHAT et al, 2006) and many of these pregnancies

contribute to distressing adverse outcomes for women, children, and their families. Every year, nearly 350,000 infants are infected with HIV via mother-to-child transmission (MTCT) (UNAIDS, 2008). Maternal mortality, the world's worst health inequity, is exacerbated in the context of HIV (National Committee on Confidential Enquiries into Maternal Deaths, 2003), with recent reports indicating that maternal deaths have increased considerably in regions of high HIV prevalence (Hogan et al, 2009). In addition, across sub-Saharan Africa there are an estimated 8.9 million maternal orphans due to HIV-associated mortality (UNICEF, 2004).

The World Health Organization (WHO) lists preventing unintended pregnancies among people living with HIV as a second pillar of preventing mother-to-child transmission (PMTCT) (WHO, 2010). Not only is preventing unintended pregnancies in HIV-infected women an effective strategy for reducing perinatal transmission but it is also cost saving (Reynolds et al, 2009) and would contribute to the reduction of maternal mortality, which may be higher among HIV infected women (Black, Brooke, and Chersich, 2009). However, most PMTCT efforts to date prioritize the provision of antiretroviral (ARV) prophylaxis to HIV infected pregnant women, their infants, and safer breastfeeding strategies (WHO, 2004; 2009; 2010).

1.1.1 Contraception as an intervention

Despite great progress in family planning, over the last several decades, more than 120 million women worldwide want to prevent pregnancy, but they and their partners are not using contraception (WHO, 2007). In less developed countries for example, more than 100 million or about 17 percent of all married women, would prefer to avoid a pregnancy but are not using any form of family planning. Health specialists and demographers refer

to these women as having an “unmet need” for family planning—a concept that has influenced the development of family planning programs for more than 20 years (Ross and Winfrey, 2002).

Considering the challenges of delivering PMTCT interventions in the peripartum period and the difficulty of delivering interventions to HIV infected infants, efforts to reduce mother to child transmission of HIV can also focus more on reducing the number of unwanted (unplanned) pregnancies among HIV positive women. This intervention would potentially have a lot of impact as women of reproductive age comprise more than half of the 33 million people living with HIV in the world (WHO, 2003). SubSaharan Africa has the highest population growth rate and the greatest burden of HIVinfection in the world. Barrier and hormonal contraceptive methods can mitigate the impact of the dual burden of high fertility and high HIV prevalence in the region. Although, contraceptive use among women in sub-Saharan African (SSA) has increased in the past decade, disparities remain and use is still below 20% in many countries due to several barriers including poor access to and affordability of family planning methods, inadequate health infrastructure, and high value on fertility (WHO, 2010; Culwell, et. al., 2010).

Counseling and provision of contraception of choice to willing HIV infected women including those on ART is an important strategy to prevent unintended pregnancies among HIV positive women who would rather wish to delay pregnancy or stop child bearing altogether. Contraception can be provided either within the treatment programs or by active referral to routine family planning providers. This would reduce number of pregnancies among HIV positive women and reduce the number of HIV infected infants.

The other benefit of contraception is that it averts HIV infection in infants at a lower cost compared to other PMTCT interventions (Cohen, 2008; Sweat et al, 2004). Indeed the prevention of unintended pregnancies among women living with HIV is one of the World Health Organization (WHO) four elements of comprehensive approach to prevent mother to child transmission of HIV (WHO, 2003).

The Ghana PMTCT guidelines also recommend counseling and provision of contraception to women living with HIV (NACP, 2011). It is therefore important to explore contraceptive counseling and provision in the context of ART delivery. However, in Ghana, unmet need remains persistently high (more than one-fifth of married women) or is increasing, indicating that greater efforts are needed to understand and address the causes of unmet need (Ross and Winfrey, 2002). Family planning coverage in Ghana was 31.1% in 2009 and fell to 23.8% in 2010.

1.2 Problem statement

The Millennium Development Goals, adopted in New York in 2000, promote universal education and gender equality, maternal and child health, and prevention and treatment for HIV/AIDS (UN, 2000). Provision of comprehensive reproductive health care is central to attaining these goals (Cates, 2010). Worldwide, as many as one-third of the 357,000 annual maternal deaths are attributable to unintended pregnancies; the majority of these mortalities occur in low- and middle-income countries (WHO, 2010). Enhanced access to family planning services in sub-Saharan Africa would result in marked reductions in unintended pregnancies and unsafe abortions and a projected 69% decrease in maternal deaths and a 57% decrease in newborn deaths (Guttmacher Institute, 2010). In addition to substantial risks of dying from pregnancy complications, women in a sub-Saharan Africa

are also at increased risk of HIV and other sexually transmitted infections (UNAIDS, 2008). Providing safe, effective contraception to HIV-infected women who desire it has also been identified by the World Health Organization as a primary strategy for prevention of pediatric infections (WHO, 2010).

Throughout sub-Saharan Africa, the prevention of unintended pregnancies has been described as “an undervalued and little-used strategy” for PMTCT (Reynolds and Wilcher, 2006). Preventing unintended pregnancy among HIV-positive women constitutes a critical and cost-effective approach to primary prevention of mother-to-child transmission of HIV and is a global public health priority for addressing the desperate state of maternal and child health in HIV hyper-endemic settings.

In Ghana, most HIV infected women are in the reproductive age and have limited access to care. This therefore hinders their visits for ANC to reduce the likelihood of transmission to the newborns and the risks of pregnancy. If they do not utilize contraceptives, they are likely to conceive and be exposed to the various risks such as Mother to Child Transmission of HIV, sexually transmitted infections in case the mother is not using a barrier method, re-infection among partners which leads to development of resistant strains.

The World Health Organization has advised that HIV counseling should include information about maternal transmission (WHO, 1990). There is little evidence to date, however, to indicate the effectiveness of this type of advice in preventing pregnancies among HIV-positive women. Findings from studies of contraceptive use among HIV positive women in sub Saharan Africa have shown that overall, contraceptive use among

HIV-positive women may be lower than that of uninfected women (Nebie et al, 2001; Desgrees Du-Lou, 2002; 2005). From the 2008 GDHS, the overall contraceptive use among married women in Ghana has nearly doubled over the past 20 years. The result of the survey indicates a relatively large increase in the late 1980s and 1990s, from 13 to 22% of married women currently using FP. However, only a small increase in contraceptive use has been observed over the past ten years.

1.3 Justification

Contraceptive use among HIV-positive women is important because it prevents pregnancy and in turn prevents mother to child transmission of HIV, reduce opportunistic infections in case the mother is using barrier method, and prevent the reduction of the mother's immunity and exposure to risks of pregnancy. It may also prevent re-infection among partners which leads to development of HIV resistant strains. The demand for contraceptives among HIV positive individuals may however be influenced by a number of factors including the number of children they already have before diagnosis, past pregnancy outcomes, the stage of the disease, concerns about side effects and interaction of the method with HIV status (Baek & Rutenberg, 2005).

This study therefore aimed to find out the contraceptive utilization of HIV positive women and the associated factors. The outcome of this study will contribute towards the understanding of the extent of contraceptive utilization and how it varies from individual to individual. The results will also be used to help improve the management, care and support of HIV positive women to incorporate their desires as women to also bear children and also contribute towards the development of policy towards provision of information to HIV positive women who desire to have children.

1.4 Research questions

1. What is the level of contraceptive prevalence rate among HIV-positive women?
2. What is the level of unmet need for contraceptive among HIV positive women?
3. What are the reasons for unmet need for contraceptive among HIV positive women?
4. What are the predictors of contraceptive utilization among HIV positive women?

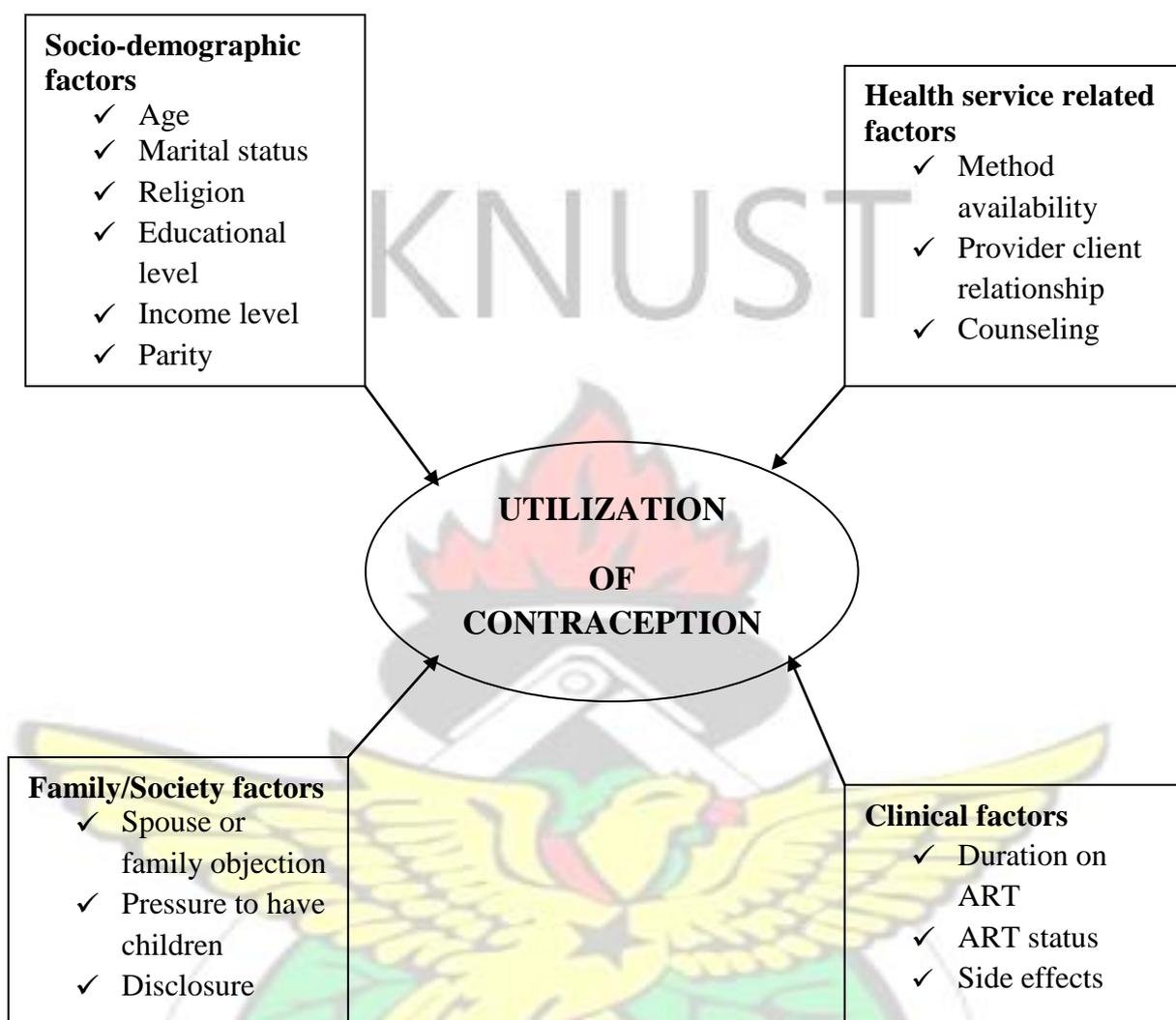
1.5 Main objective

The main objective of this study is to assess the factors influencing contraceptive utilization among HIV positive women in the Kumasi metropolis.

1.6 Specific objectives

- 1) To determine the contraceptive prevalence rate among HIV-positive women in the Kumasi metropolis
- 2) To determine level of unmet need for contraception among HIV positive women on ART and reasons for unmet need.
- 3) To describe the clinical factors influencing contraceptive uptake.

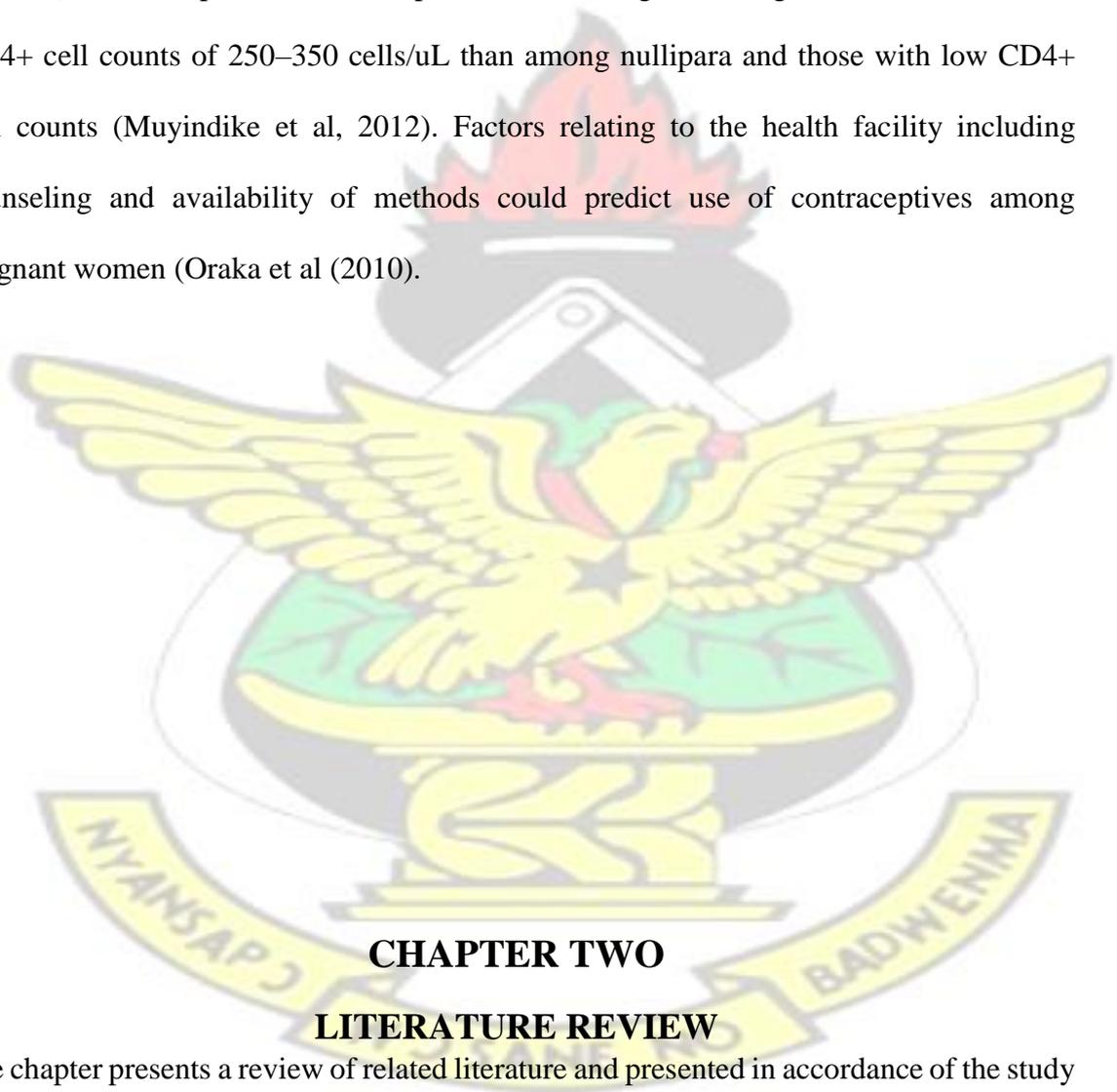
1.7 Conceptual framework



Source: Author's construct, 2013

The conceptual framework above shows the various factors that could predict the utilization of contraception. These factors are socio-demographic factors, health service related factors, family factors and clinical factors. The socio-demographic factors considered in this study were age, marital status, religion, education, income and parity and these have been shown to influence the use of contraceptives among HIV positive women (Ademayi et al, 2011; Kaida et al, 2010; Muyindike et al (2012).

Family or societal factors like spouse objection, pressure to have children and disclosure are also known to predict contraceptive usage (MacPhail et al, 2007)). It is asserted that women who are able to disclose their status to their partners are more likely to use contraceptives with partners. Utilization of contraceptives is also known to be influenced by clinical factors, which included ART status, duration on ART and side effects. Women who experienced side effects might be less interested in using contraceptives (Westhoff et al, 2007). Contraceptive use is also predicted to be higher among healthier women with CD4+ cell counts of 250–350 cells/uL than among nullipara and those with low CD4+ cell counts (Muyindike et al, 2012). Factors relating to the health facility including counseling and availability of methods could predict use of contraceptives among pregnant women (Oraka et al (2010).



CHAPTER TWO

LITERATURE REVIEW

The chapter presents a review of related literature and presented in accordance of the study objectives. It starts with the overview of women and HIV/AIDS followed by the major themes in the specific objectives of the study.

2.1 Women and HIV/AIDS

In sub-Saharan Africa, women are more likely to become infected with HIV than men. The most recent prevalence data show that in sub-Saharan Africa, 13 women become infected for every 10 men infected. One half of people living with HIV globally are women and 76% of all HIV-positive women live in sub-Saharan Africa. Conversely, traditional roles and societal values related to masculinity might encourage boys and men to adopt risky behaviours, including excessive alcohol use and concurrent sexual relationships, so increasing their risk of acquiring and transmitting HIV. Many harmful norms related to masculinity and femininity also stigmatize transgender people, men who have sex with men, and other sexual minorities.

In the early stages of the pandemic, HIV infection was predominantly among men in many industrialized and some developing countries. As of the end of 2002, however, almost 50% (19.2 million) of the 38.6 million adults living with HIV/AIDS globally are women. In Sub-Saharan Africa, about 60% of HIV-positive adults now are women (WHO, 2010). HIV prevalence during pregnancy is generally higher than in the general population and even within countries it is diverse among pregnant women. The prevalence among pregnant women in Malawi ranged from less than 7% at a site in the central region to 33% at the southern tip of the country in 2003 (UNAIDS, 2005). In

Botswana and Lesotho, the HIV prevalence exceeds 25% in pregnant women. In Swaziland, HIV prevalence among pregnant women soared to 43% in 2004, up from 34% four years earlier and from 4% in 1992. Current ANC prevalence is 39% (UNAIDS, 2005). A research conducted by Glynn et al (2001) on factors influencing differences in HIV prevalence between antenatal clinics and the general population in Sub Saharan

Africa revealed differences between HIV prevalence in ANC and in the sexually active women in the population were different in the different age groups (especially in Yaounde) and by marital status (in Yaounde and Ndola.

2.2 Contraceptive Prevalence among HIV/AIDS women

Pregnancy among women living with HIV is an issue of public health importance especially in resource limited countries with high HIV prevalence and high fertility rates. Pregnancy in this category of women is associated with increased risk of poor outcomes which include maternal mortality as well as paediatric HIV infections (McIntyre, 2003). Contraception has however been outlined as a key strategy to reducing MTCT of HIV/AIDS and secondary infection of AIDS.

Contraceptive use continues to remain low despite the high level of knowledge about contraceptives. According to the 2008 GDHS, contraceptive prevalence rate increased from 22% among currently married women in 1998 to 25% in 2003 and has remained steady over the past five years (24% in 2008). Similarly, the use of modern methods nearly doubled over the past 15 years from 10% in 1993 to 19% in 2003, before declining slightly to 17% in 2008 (GSS/GHS/ ICF Macro, 2009). Overall, there has been only a small decrease in use of traditional methods over the past 20 years. While there was an increase in the use of traditional methods from 8% in 1988 to 10% in 1993, use of these methods decreased to 9% in 1998 and to 7% in 2003, and remained at this level in 2008. Among HIV positive women, the condom was reported to be the most commonly used contraceptive (Oraka et al (2010).

In a study by Oni, Ross and Van der Linde (2013), Condom use was highest amongst patients in serodiscordant relationships (71%), and lowest amongst patients whose partners' HIV status was unknown (61%). 61.3% of the HIV positive clients were using condoms (alone or combined with other methods), 20.0% injectable contraceptive, 19.7% abstinence, 4.5% intrauterine contraceptive device (IUCD), 2.2% pills and 0.7% coitus interruptus. A combination of condoms and injectable contraceptives was reported by 27 participants, a combination of condoms and pills was reported by four participants, whilst three study participants reported using a combination of condoms and IUCD.

According to the 2008 GDHS, the injectable and rhythmic method were the two most commonly used methods among currently married women in every age group with the exception of women aged 45-49 years. Injectables were the most commonly used method by married women aged 20-24 years and those in their 30s, whereas rhythm was mostly used by teenagers and women in their early 40s. Except for women in their late 40s, pills were the third most commonly used method (after injectables and rhythm) in every age group. After the male condom (18%), the most commonly used modern method among sexually active unmarried women was the pill (10%), while rhythm (12%) was the most widely used traditional method (GDHS, 2008).

A study carried out in Lesotho on desire for children and unmet need for contraception among HIV positive women showed that HIV positive women who had learned of their status had slightly lower desire for children. The study also showed that of the HIV positive women, 38.7% intended to have a child. This study also revealed that the unmet need for contraception was higher among the HIV positive (31.3%) women than among the HIV negative women (44.3%). In addition, the study found that only 6.3% of the positive women were using condoms and therefore this contraception was not contributing much to the prevention of transmission of HIV.

In a study conducted by Bradley et al. (2009) using DHS data from eight countries (Armenia, Bangladesh, Colombia, the Dominican Republic, Egypt, Indonesia, Kenya, and Zimbabwe) the prevalence of contraceptive methods was found to vary across countries. Injectable contraceptives were the most commonly used method in Kenya and Indonesia. Pills were the dominant method in Zimbabwe and Bangladesh. The injectables were the second most commonly used method in both of these countries. In these countries, both the pill and injectable use had become increasingly common, whereas withdrawal use had become less so. On the other hand, the dominant method in Egypt was the IUD. In Indonesia, female sterilization and injectable use increased while pill, IUD, and implant use decreased. The pill, IUD, periodic abstinence, and withdrawal were all widely used in Colombia.

Using DHS data from 35 countries, Khan et al. (2007) found that in the countries surveyed, contraceptive prevalence ranged from 8% in Eritrea, Ethiopia, Mali, and Mauritania to 78% in Colombia and 79% in Vietnam. Sub Saharan Africa recorded the lowest prevalence rates: less than 20% in eight of the 18 countries. Namibia had the highest prevalence rate (44%), followed by Kenya (39%) and Zambia (34%). In the study by Muyindike et al (2012), 28% of the HIV positive women reported use of contraception at enrollment. The most common methods reported included the use of injectable hormones (52%), condoms (30%), and oral contraceptives (9%). Use of highly effective contraceptive methods was reported for 18% of the study subjects, two-thirds (65%) of those using contraception.

2.3 Unmet need for contraception

Unmet need occurs when women who no longer want to become pregnant or who want to delay a pregnancy are sexually active but are not using a method of contraception to avoid or delay a pregnancy (Casterline et al., 2003). Unmet need for contraception may still put HIV-positive woman at risk of pregnancy even if she does not want to have a child in the future or she wants to space her births. Unmet need can therefore lead to unplanned pregnancy and unwanted births, which may in turn result in such negative public health consequences as increased maternal, neonatal, and infant morbidity and mortality (Conde-Agudelo et al., 2006).

While fertility has declined throughout the developing world since the 1970s, most of the least developed countries still have total fertility levels above 5 children per woman. Furthermore, universal access to reproductive health, which is one of the key goals of the Programme of Action adopted by the International Conference on Population and Development (ICPD) in 1994 and reaffirmed by the World Summit in 2005, is still far from being achieved. Unmet need for FP in the least developed countries also remains high. Thus, particularly in the least developed countries, satisfying the unmet demand for modern FP methods would reduce fertility, moderate population growth and have several beneficial effects on maternal and child health that would contribute to the achievement of other key Millennium Development Goals (PATH/UNFPA, 2006).

There is evidence of high levels of unmet need for contraception in Ghana. For example, Khan et al. (2007), using data from the 2003 Ghana Demographic and Health Survey (GDHS) showed that 22% of currently married women who wanted to hold-up further childbearing for 2 years or more and 12% who want to stop additional childbearing were not using a method of contraception at the time of the survey.

While in some studies knowledge of HIV status among infected women resulted in an increase in contraceptive use, other studies found a lack of persistent use of contraception beyond one year or no significant difference compared with HIV-negative women (Allen et al., 1992; Allen et al., 1993; Kamenga et al., 1991; Nebie et al., 2001; Rutenberg and Baek, 2005). In Uganda, a study found that 73% of women exhibiting behavior that put them at risk of pregnancy did not want any more children (Nakayiwa et al., 2006).

2.4 Predictors of contraceptive utilization

2.4.1 Demographic factors

Previous literature has shown the influence of socio-demographic factors of HIV positive women influence their utilization of contraceptives. For instance, the study in Rwanda by Ademayi et al (2011), found that, there were significant associations between condom use and HIV status, number of living children, partner's knowledge of HIV status, age and income.

□ Age

The age of an expectant mother determines if they will seek ANC services because of the fear and stigma attached to adolescent pregnancy from the community. These young teen therefore do not seek medical help and in addition they do not have enough resources to meet the health provider's fee and transportation costs if they were required (Nakazzi, 2002). The study by Chibwasha and others in Zambia also found age to be associated with successful access to contraceptive services within 90 days of a counseling visit. Women 25–34 years (AOR: 0.53; 95% CI: 0.30–0.92) or ≥ 35 years (AOR: 0.49; 95% CI: 0.25–

1.00) had lower odds of accessing contraceptive services than women 16–24 years (Chibwasha et al, 2011).

Age of HIV positive women was again associated with contraceptive use in the study Muyindike et al in 2010 in Southwestern Uganda where age (less than 24 years inclusive) was independently associated with increase odds of contraception in the study of Contraceptive use and Associated Factors among Women Enrolling into HIV Care in Southwestern Uganda. The study by Kaida et al (2010) on contraceptive use and method preference among women in Soweto, South Africa also found that age of the HIV positive women significantly influence the use of contraceptives.

□ *Income*

In the Zambian study, income status of HIV positive women influences contraceptive use. Women who reported a higher monthly income also had lower odds of accessing contraceptive services than women who were less wealthy (AOR: 0.68; 95% CI: 0.47–0.98) (Chibwasha et al, 2011). The study of Contraceptive use and associated factors among women enrolling into HIV Care in Southwestern Uganda also found Income, to be significantly with contraceptive use. HIV positive women who earned more income (>250,000 Uganda shillings/month) were more likely to use contraceptives (Muyindike et al, 2012). The study by Allen et al (1993), on pregnancy and contraception use among urban Rwandan women after HIV Testing and Counseling also found out that, factors associated with more frequent use of hormonal contraceptives included having a salaried job. Women who had salaried jobs earned more income as compared to the others.

□ *Parity*

HIV positive women, equally have desire to have children. This means that the number of children one has could influence their decision to use contraceptive which could prevent pregnancy. In the study by Oraka et al (2010), HIV-positive women were less likely to report wanting additional children than HIV-negative women (8 vs. 49%, $P < 0.001$). According to study by Kaida et al (2010) in their study on contraceptive use and method preference among women in Soweto, South Africa, having two or more living children, and expressing an intention not to have more children remained most strongly associated with contraceptive use.

In the study of modern contraceptive and dual method use among HIV-Infected women in Lusaka, Zambia, multiparae were more likely to access reproductive health services within 90 days than women with no living children (AOR: 1.83; 95% CI: 1.17–2.88) Chibwasha et al (2011). The study of Contraceptive use and associated factors among women enrolling into HIV care in Southwestern Uganda by Muyindike et al (2012) also reported parity (having 3 or more living biological children) to be independently associated with increased odds of contraception.

□ *Marital status*

Marital status of HIV positive women has also been explored to influence their use of contraceptives. In a study carried out by the African DITRAME project, contraceptive use of HIV positive women was found to be 39% and one of the factors that were significantly related to contraceptive use was marital status. The influence of marital status on contraceptive use among HIV positive women was also reported in the study of contraceptive use and associated factors among women enrolling into HIV Care in Southwestern Uganda. This study found the odds of contraceptive use among single and

previously married women remained significantly lower than that among married women (Muyindike et al (20120). Marital status of HIV positive women was also reported to influence contraceptive use in the study in Uganda by Allen et al (1993). Being single was associated with more frequent use of hormonal contraceptives and most single women preferred injectables.

KNUST

□ *Education*

Educational levels also have an influence on the woman's health seeking behavior and therefore those that have continuously been educated about the importance of going to the health facility when they are pregnant and its importance will always try to access medical services. This means that once they deliver from a health facility the chances that a woman will be exposed to the various methods of family planning by the health service provider is high (Robinson, 2002).

In the study by Chibwasha et al (2011) in Zambia, the educational level of HIV positive women was significantly associated with contraceptive use. HIV positive mothers who had completing secondary education were more likely to use contraceptives as compared to other counterparts. Educational level of HIV positive women was again found as one of the factors associated with use of contraceptives. Having at least 5 years of schooling increased likelihood of using hormonal contraceptive. Highly educated and working women showed a marked preference for oral contraceptives (Allen et al, 1993)

□ *Religion*

Some previous studies have sought to investigate the relationship between religious affiliations and use of contraceptives. Studies by Khan (2001) and D'Antona et al (2009)

found religious opposition as reasons for contraceptive non-use and discontinuation among respondents. On the other hand, a study by Parr (2003) in his study of contraceptive use in Ghana, found no significant association between religious affiliation and contraceptive use.

KNUST

2.4.2 Social Factors

There was evidence of association between contraceptive use and being employed or a student (vs. unemployed); fewer sex partners; type of last sex partner; having talked to last partner about condom use and having ever been pregnant (MacPhail et al, 2007). Contraceptive use among adolescent women is significantly associated with both employment and educational status. Interestingly, women were more likely to use contraception when reporting a single partner in the last 12 months, when reporting a main partner and when reporting increased sexual activity in the past month. This indicates that young women are considering the use of contraceptives only once they are involved in long-term, regular relationships. There remains, however, a need to offer contraceptive services to young women who are intermittently sexually active in less stable types of relationships.

There is association between monogamy and non-utilization of contraception. However, women in polygamous marriages were more likely not to use contraception when they were older than 35 years, had 4 or more living children, had no male child, had 3 or more female children, or lived in rural areas. There is also association between nonutilization of contraception and number of male children (Audu et al, 2006). Attitudes towards child-bearing and changes in sexual and contraceptive practices among women is affected by their ability to make decisions concerning their reproductive health and rights (Shah,

2003). Better-off women who want significantly fewer children than did moderately or extremely poor women are more likely to approve of family planning (93% vs. 87–91%) and were more likely to believe their spouses approved. Better off women have higher odds of using modern contraceptives which are more effective than do extremely poor women. In addition, those who wanted two or fewer children had higher odds of using a modern method (Schoemaker, 2005).

Status disclosure is sometimes difficult for HIV positive women especially in this setting where stigmatization is still prevalent in our communities. Women who are able to disclose status to their partners could use condom to prevent secondary infections and pregnancy. The study of Contraceptive use and associated factors among women enrolling into HIV care in Southwestern Uganda by Muyindike et al (20120), HIV disclosure was not associated with contraceptive use in bivariate or multivariable analyses.

2.4.3 Health facility related factors

□ Contraceptive information and services for HIV positive women

Women living with HIV/AIDS (WHA), like other women, may wish to avoid unplanned or unwanted pregnancies. Women should be offered a wide range of contraceptive methods in order to make informed choices regarding reproduction. Twenty-five percent of WHA worldwide have an unmet need for contraception (Reynolds et al, 2006). More importantly, contraceptive methods must not increase the risk of HIV transmission to women at risk of HIV, increase disease progression or mortality rate in WHA, or increase incidence of sexually transmitted infections (STIs) and/or other related infections in this already vulnerable population. The range of methods available plays a particularly

important role in women's acceptance of contraception and their continuation of use. The ability to choose from among a variety of contraceptive methods is essential for increasing the prevalence of use, and should be a part of FP programs (D'Antona et al., 2009).

Women on ART also have reproductive needs just like any other women. There is need therefore to furnish the women with appropriate contraceptive information. Studies have however found that health care workers may not furnish appropriate information to women living with HIV. A study in Zimbabwe reported unfavorable attitudes by health workers towards sexual activity and child bearing by these women. HIV positive women reported several negative issues emanating from medical providers like discrimination, ridicule and coercive sterilization by medical providers (Fieldman and Maposhere, 2003). The study also reported that health care workers had negative attitudes towards HIV infected women seeking contraceptive information because they did not anticipate that these women would be sexually active or wish continue to desire more births (Fieldman and Maposhere, 2003).

A study in Brazil found that HIV positive women were not able to make informed choice on reproductive health in general because they were given very little information on the subject and that reproductive health decisions for the women were made by health professionals not out of medical indications but rather by local medical beliefs and prevalent beliefs in society (Knauth, Barbosa and Hopkins, 2003).

□ *Counseling and relationship with health workers*

Negative staff – client relationships are known to influence the utilization of services. Good relation between health staff and clients, build confidence and help discussing issues surrounding life choices including the use of contraceptives. In a study on modern

contraceptive and dual method use among HIV-Infected women in Lusaka, Zambia, of the 7,503 (40.8%) women in cohort not using modern contraception, 737 (9.8%) women desired contraception after counseling and 71 stated an intention to use dual methods. This shows the positive impact of counseling on acceptance of family planning among HIV positive clients. In the study by Oraka et al (2010), a majority of women reported discussing family planning with a health worker during their last pregnancy (HIV positive 79% vs. HIV-negative 69%, $P = 0.0$).

2.4.4 Clinical factors

ART was associated with an increase in fertility desire, but was not associated with an increase in fertility (Maier et al, 2008). Women with HIV and on ART feel healthy and therefore feel that they can have a normal healthy life thus the increase in the fertility desire. In some centers however, this has been associated with increase in pregnancy rates especially for women who wish to have children. In addition however, women also have fears of using contraceptives because of the side effects associated with the different methods. Nearly 60% of subjects discontinued the OC by 6 months. Most subjects reported no changes in headaches, weight, moodiness, and sexual satisfaction during the first 3 months of OC use. Subjects with any complaints, especially those with increased headaches or moodiness, were more likely to discontinue the OC prematurely. Side effects are absent or mild among most OC users, but women with complaints are more likely to discontinue (Westhoff et al, 2007). However a study carried out amongst young people in University in Uganda found that after controlling for education and ever use of contraceptives, having worries increased the likelihood of having side effects (Byamugisha, 2007). This could mean that women who are HIV positive may have more worries which probably pre disposes them to experiencing certain side effects.

In the Zambian study of contraceptive use and associated factors among HIV positive women, contraceptive use was higher among healthier women with CD4+ cell counts of 250–350 cells/uL (AOR: 1.18; 95% CI: 1.05–1.33) or ≥ 351 cells/uL (AOR: 1.23; 95% CI: 1.10–1.38) than among nullipara and those with low CD4+ cell counts (Muyindike et al, 2012). In the study by Kaida et al (2010) however, there was no clear association between duration of HAART use and prevalence of contraceptive use. The prevalence of contraceptive use remained steady (between 82% and 92%) for all lengths of time on HAART with the exception of women receiving HAART between one and two years, who had the lowest prevalence of contraceptive use at 67%.

CHAPTER THREE

METHODOLOGY

This chapter looks at the various methods employed in undertaking this study. It focuses on a brief profile of the study area, the study design, techniques and how respondents for the study were sampled. It further looked at the variables to be studied and how data were taken and analyzed.

3.1 Study Design

This is a descriptive cross-sectional study employing both quantitative and qualitative techniques. Data were collected at the individual and facility level.

3.2 Study Area

The study was conducted in the Kumasi Metropolis of the Ashanti Region of Ghana. Kumasi metropolis is the largest of the twenty-seven (27) political divisions (metropolis, municipality, districts) in Ashanti Region with an estimated population of 1,430,241 and annual growth rate of 3.4%. The metropolis is bounded in the north by Kwabre, Bosomtwe and AtwimaKwanwoma to the south; on the east is Ejisu-Juaben and Atwima is on the west of the metropolis. This population is distributed in about seventy-six (76) communities in the metropolis. Two health facilities were randomly selected in the metropolis, namely, Suntreso Government hospital, a public facility and Kwadaso SDA hospital, a faith based health facility affiliated to the Christian Health Association of Ghana (CHAG).

Suntreso Government Hospital is the hospital of Bantama sub-metro. The sub-metro is bounded by Atwima and Bosomtwe Atwima Kwanwoma to the north and south west respectively and to the east by Asokwa Manhyia and Subin sub metros. The Hospital is located at North Suntreso and serves about 50 communities in the Kumasi Metropolis. It consists of 15 departments which are administration, STI/HIV department, maternity, mother and child health unit, neonatal unit, family planning, theater, male and female wards, pharmacy, DOTS centre, out patients department, eye-ear-nose and throat department, dental, laboratory and records. The Hospital has staff strength of 243 of which nurses form majority (49%) with bed capacity of 105.

The STI/HIV Clinic is a department where sexually transmitted infections are treated and more especially where HIV clients are attended to, given care, support and treatment. The Clinic started providing ART in July 2008 and has 3800 registered persons living with HIV as at now; 1266 males and 2534 females. Among the 3800 clients, 2600 are receiving

ART. The department consists of specially trained doctors, nurses, pharmacist nutritionist, laboratory technicians and data entry clerks.

Kwadaso SDA Hospital is a faith based hospital that is been registered under the Christian Health Association of Ghana (CHAG). The Hospital is located at Kwadaso and serves Kwadaso and its surroundings. It consists of 14 departments which are administration, HIV clinic, maternity, mother and child health unit, family planning, theater, male and female wards, pharmacy, DOTS centre, out patients department, dental, eye-ear-nose and throat department, laboratory and records. The Hospital has staff strength of 228 of which nurses form majority (42%) with bed capacity of 71.

The HIV Clinic is a department where HIV clients are attended to, given care, support and treatment. The Clinic started providing ART in October 2007 and has 1544 registered persons living with HIV as at now; 430 males and 1114 females. Among the 1544 clients, 830 are receiving ART. The department consists of specially trained doctors, nurses, pharmacist nutritionist, data entry clerks and laboratory technicians.

3.2.1 Health Care System in Kumasi

The health system in Kumasi currently has three levels. The top level consists of one tertiary hospital (KATH), while secondary care hospitals (regional and district) make up the second level, and health centers make up the third. KATH, which is located at Bantama Sub-Metropolitan area, serves as a reference laboratory for the rest of the hospitals in the metropolis. The regional hospital for Kumasi is the Kumasi South Hospital. It is situated at Chirapatre, within the industrial hub of the metropolis and serves the people of Asokwa, Ahensan, Atonsu, Esreso, Gyenyase and Kaase. The

Manhyia Hospital, located at Ashanti Newtown near the Manhyia Palace, serves Manhyia, Krofrom, Ashanti Newtown, Aboabo and Asawasi communities. The Suntreso Government Hospital is located at North Suntreso and serves North and South Suntreso, Patasi Estate, Kwadaso, Adoato, Asuoeyboa, Breman and Suame. KomfoAnokye Teaching Hospital (KATH) is an autonomous facility. Private hospitals and facilities are overseen by Ghana Health Services.

Health facilities in Kumasi include teaching hospitals (1); Quasi, -government health institution (4), CHAG institutions (3), MCH clinics (2), Community clinic (1) and Government/public hospitals (5). Majority of the health institutions in the metropolis are privately owned with 13 out of the 180 private health institutions being industrial clinics. Some of the sub-metro government hospitals serve as regional sites for different medical services, such as ear, nose and throat (ENT) surgery or sexually transmitted infections (STI) care. The Kumasi Metro Health Directorate oversees all sub-metro district hospitals. In addition to these sub-metro district hospitals, there are also quasigovernmental, private and mission hospitals, which offer similar levels of care to the government hospitals. Private facilities are under the jurisdiction of the Regional Health Directorate. There are also 122 outreach stations in Kumasi, located throughout the five sub-metro areas (KMHD, 2008).

HIV/AIDS is known to underlie some of the conditions presented at OPD even though is not part of the first ten causes of OPD attendance in the Metropolis. HIV/AIDS-related condition is the fourth most important cause of mortality in the Metropolis and an underlying factor of most other presentations which thus present as opportunistic infections Malaria forms majority of cases presented to the OPD with severe malaria

forming 2.8% of malaria cases and 1.5% of all cases. HIV/AIDS continues to be a major challenge to health professionals in the metropolis (KMAHR, 2008). HIV testing and Counseling (HTC) activities are currently carried out at twenty two (22) centres in the metropolis including KATH. Antiretroviral treatment is offered at nine (9) centers namely KATH, Kumasi South Hospital, Suntreso Government Hospital, Kwadaso SDA hospital, Aninwaa Medical Centre, Asafo Agyei Clinic, Atasomanso Hospital, KNUST Hospital and Bomso Clinic. Currently, the region is second to the Eastern region in the prevalence of HIV/AIDS (NACP, 2011).

3.3 Study Population

The study was conducted in two (2) ART centres across Kumasi. This involved one faith based health facility and one public health facility. The study population consisted of HIV positive women who have been put on ARVs for treatment or prophylaxis. The study will also include staff of the ART centers.

3.3.1 Inclusion criteria

- HIV positive women from 18 to 49 years
- HIV positive women who have been on ART for more than three (3) months

3.3.2 Exclusion criteria

- HIV positive women less than 18 years and above 49 years
- HIV positive women who have been on ART for less than three (3) months

3.4 Sampling Technique

A multistage sampling technique was employed in this study. The first stage involved a simple random sampling of the ART centres and the second stage involved a systematic random sampling of respondents for the study. In the first stage, one ART centre in a

public facility was selected from a total of nine (9) in the metropolis. This was done by writing the names of all the public facilities with ART centres on pieces of papers and folding them into a box. For the second stage, respondents for the study were also selected by systematic random sampling through exit interviews. That is, the i^{th} client was selected based on the total number of clients who visited the facility. The sampling interval was obtained by dividing the number of clients per the required sample size.

That is;

$$\text{Sampling interval } (n_x) = \frac{\sum m_c}{f_t} \dots\dots\dots (1)$$

Where, f_t = fixed number of respondents to be selected with a particular total number of clients ($\sum m_c$).

The faith based facility was selected on purpose since there is only one in the metropolis providing PMTCT services.

3.5 Sample Size

The total sample size for the study was estimated as follows:

$$n = \frac{z^2 pq}{d^2} \text{ (Kirkwood and Sterne, 2003),}$$

Where, n = the desired sample size, z = the standard normal deviation 1.96
 p = proportion of women in reproductive age, i.e. 23% $q = 1.0-p$, d = degree of accuracy desired at 0 .06
 $n = (1.96)^2 (0.23) (0.77) / (0.06)^2$
 $n = 188$

10% of non-respondent effects were used to comprehend the sample size, thus
 $0.10 * 188 = 19$
 $n = 188 + 19 = 207$

Using the default design effect (*deff*) of 2.0 (to achieve the same reliability that a *SRS* would produce), the sample size was therefore given as $207 \times 2.0 = 414$. Therefore a sample size of 414 participants was employed in the study.

3.6 Study Variables

The variables for the study were categorized into dependent and independent variables. The dependent variable was utilization of contraceptives (Use of any modern or traditional method by women to delay or avoid pregnancy). The independent variables were the various factors that influence utilization of contraceptives among HIV positive women. These include socio-demographic factors, family or societal factors and clinical factors.

- **Demographic characteristics;** age, marital status, education levels, income and religion
- **Health service related factors:** method availability, counseling, relationship with health staff
- **Social factors;** disclosure, decision making powers, pressure to have children, spouse/partner objection
- **Clinical factors;** ART status, duration on ART, side effects

Table 3.1 Study variables and operational definition

Variables	Indicators	Operational definition	Type of variable
Contraceptive uptake	Use of any form of contraceptive		Nominal
Age	Chronological age	Age as at last birthday	Continuous
Marital status	Expressed in terms of legal status		Nominal
Educational level	Type of educational institution last attended	As reported by informants	Ordinal

Religion		As reported by the informants	Nominal
Income	Personal income		Continuous
Method availability	Contraceptive method available		Nominal
Disclosure of HIV status	Disclosed or not disclosed	Disclose of status to partner	Nominal
ART status		As recorded in informants folder	Nominal
Duration on ART		Period of being on ART	

Source: Author's construct, 2013

3.7 Data Collection and Tools

Qualitative Study

Data were obtained through FGDs and in-depth interviews with key informants using tape recorders and interview guides. Interviews and the FGDs were carried out in quiet and discreet locations in the hospital's outpatient department and were conducted and audio-taped in the local language. Tapes were transcribed verbatim in Twi and then back-translated into English. Spot checks of interview and FGD transcripts and translations were regularly conducted to ensure the completeness of the transcription and the accuracy of the translation.

Focused group discussion is a qualitative method that is used to obtain in-depth information on concepts, perceptions and ideas of a group. The objective for the FGD was to obtain in-depth information on participant's perception on contraceptive utilization. Simple random sampling was used to select participants for the FGD. Two sessions were done in each facility and each session was made up of 8 participants. Each session lasted for 60 minutes. During the discussions, facilitators first introduced themselves and then asked participants to do same. The outlined questions were then read in turns, with follow up questions to get in-depth views of participants. With the use of a stopwatch, the

discussions were kept within the specified time frame and facilitators ensured that all participants fairly shared their opinions. Some of the themes that came up for discussion were disclosure of HIV status to partners and why participants were not using any FP method to prevent pregnancy. Tapes were transcribed verbatim in Twi and then back translated into English. Spot checks of interview and FGD transcripts and translations were regularly conducted to ensure the completeness of the transcription and the accuracy of the translation.

Quantitative Study

The data collection technique for the quantitative method was interviewing and the tool was structured questionnaires. The questionnaires comprised of both open and closed ended questions. Most of the designed questions were closed ended to provide responses for respondents to choose from and this was meant to limit unnecessary answers that had no bearing on the study objectives. Steps were taken to avoid ambiguity and the use of jargons in the construction of the questionnaires. All questionnaires and interview results from the field were checked for completeness and internal errors during data cleaning and entering.

3.8 Pre-testing

Questionnaires and interview guides were pre-tested at Obuasi Government Hospital to check for clarity, consistency and acceptability of the questions to respondents. Following this, the necessary corrections were made and questionnaires finalized for the actual field work.

3.9 Data Handling and Storage

The collected data from the questionnaires were entered into SPSS software programme. The data was checked for completeness and all corrections were made. These checks were done on regular basis and back-up copies saved on an external hard disc for safe keeping

3.10 Data Analysis Plan

The questionnaires were coded before the analysis was carried out. The data for this study was analyzed at three levels. These were the univariate, bivariate and the multivariate level of analyses. The univariate analysis involved the overall description of the variables (independent and dependent variables) independently. The bivariate analysis on the other hand, which involved the analysis of two variables (i.e. the dependent variable versus the independent variable) were used to determine whether any association existed between the dependent and independent variables. This was done by using Pearson Chi-square (X^2) tests.

Multivariate analysis (multivariate logistic regression) was carried out to further analyze variables, was significant at the bivariate analysis. This was used to examine the critical determinant of contraceptive utilization among HIV positive women by testing for the level of critical predictability and significance.

STATA version 11 was used for cleansing and standardizing data (to adjusted form), and for analyzing data and performing chi-square and logical regression analysis for associations. All statistical tests were two-sided and considered significant at $\alpha = 0.05$.

Qualitative data was analyzed using Atlas.ti. Audio-recorded data from interviews of respondents were transcribe verbatim and translated into English. A preliminary analysis

of interviews were done, and used for validation of results and further exploration using focus group interviews.

Estimation model

A logit model was used to assess the odds of utilizing contraceptives among the HIV positive women. In essence, the logistic model predicts the logit of Y (discontinuation) from X (covariates). The logit is the natural logarithm (\ln) of odds of Y , and the odds are ratios of probabilities (π) of Y happening (i.e. an HIV positive woman utilizing a contraceptive method) to probabilities ($1 - \pi$) of Y not happening (i.e. an HIV positive woman not utilizing a contraceptive method).

The logit model is expressed as:

$$\begin{aligned} \text{Logit}(Y) &= \text{natural log(odds)} \\ &= \ln \left[\frac{\pi}{1-\pi} \right] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p \end{aligned} \quad \dots\dots\dots (2) \quad (\text{Peng, 2002})$$

Where: π is the probability of an event (in this case contraceptive utilization), α is the Y intercept (constant), β_s are regression coefficients, and X_s are a set of predictors (covariates).

3.11 Ethical Consideration

Ethical clearance for the study was obtained initially from the Committee on Human Research, Publications and Ethics (CHRPE). In addition to this, clearance was also obtained from the Municipal Health Administration. All these approval was granted, informed consent was obtained from the respondents of the study. The respondents were assured of privacy and confidentiality.

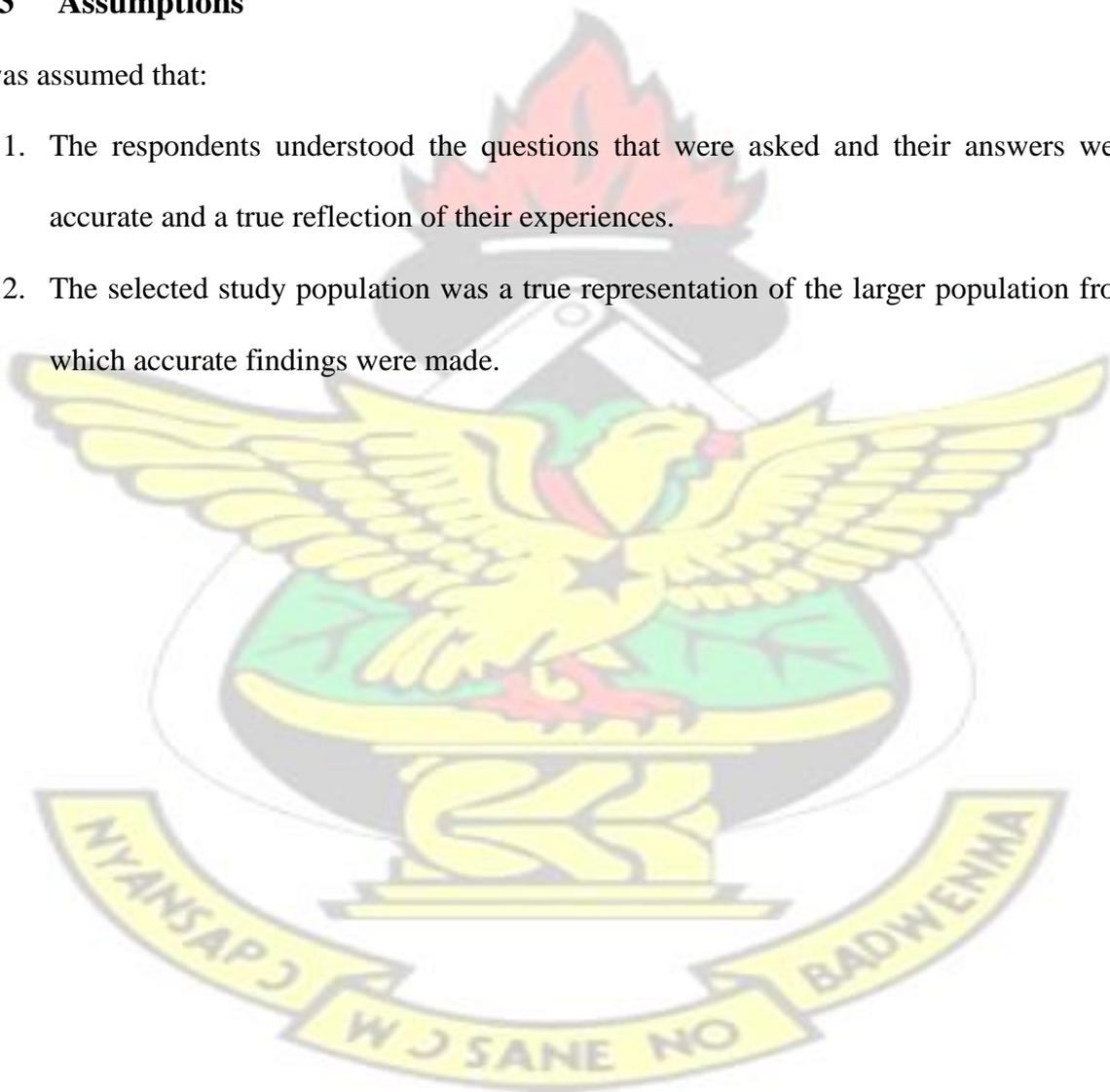
3.12 Limitation of Study

- The problem of recall bias occurred because of the retrospective nature of the questions.
- The questionnaires and interviews were conducted in the “Twi” language and there was the potential of misinterpretation of the questions by research assistants which could lead to information bias.

3.13 Assumptions

It was assumed that:

1. The respondents understood the questions that were asked and their answers were accurate and a true reflection of their experiences.
2. The selected study population was a true representation of the larger population from which accurate findings were made.



CHAPTER FOUR

RESULTS

This chapter presents findings of the study. Results are presented in tables and figures proceeded by narrations. All 414 participants qualified for inclusion into the study.

4.1 Background characteristics of respondents

Table 4.1 shows the summary of socio-demographic characteristics of respondent involved in the study. Majority (63.4%) of the respondents involved in the study were recruited from a private facility whereas 36.6% were from a public facility. The mean age of the respondents was 36 years (SD=6.9) with about half being above 34 years. Only 1.4% of the clients were below 25years. About 49.3% of the respondents were married whereas only 8.8% of them were single. Interestingly, about 13.8% of the respondents were cohabiting with their partners. Majority of the respondents had basic education (primary and JSS) and about 10% had no formal education. Most (88.6%) of the respondents were Christians whereas about 11% of the respondents were Muslims. Most of them were employed and almost 61% were working as trader/businessmen whereas 12.3% were artisans.

Table 4.1 Socio-demographic characteristics of respondents

Variable	Frequency (n)	Percentage (%)
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Type of facility (n=413)		
<input type="checkbox"/> public	161	36.6
<input type="checkbox"/> Private	262	63.4
Age (n=412)		
<input type="checkbox"/> <25	6	1.4
<input type="checkbox"/> 25-34	198	48.1
<input type="checkbox"/> 35-44	146	35.4
<input type="checkbox"/> >44	62	15.1
Marital status (n=414)		
<input type="checkbox"/> single	37	8.9
<input type="checkbox"/> married	204	49.3
<input type="checkbox"/> separated	20	10.1
<input type="checkbox"/> divorced	42	13.1
<input type="checkbox"/> widowed	54	13.8
<input type="checkbox"/> cohabitation	57	
Education level (n=414)		
<input type="checkbox"/> primary	88	21.3
<input type="checkbox"/> JSS	155	37.4
<input type="checkbox"/> secondary	113	27.3
<input type="checkbox"/> tertiary	18	4.3
<input type="checkbox"/> no formal education	40	9.7
Region (n=396)		
<input type="checkbox"/> Christian	351	88.6
<input type="checkbox"/> Muslim	43	10.9
<input type="checkbox"/> Traditional	2	0.5
What is your main occupation (n=406)		
<input type="checkbox"/> Artisan (carpenter, mason, plumber, driver, etc)	50	12.3
<input type="checkbox"/> farmer	33	8.1
<input type="checkbox"/> civil/public servant	5	1.2
<input type="checkbox"/> trader/businessman	247	60.9
<input type="checkbox"/> unemployed	71	17.5

Source: Field data, 2013

4.2 Reproductive health and sexual activity history

Table 4.2 is a summary of the reproductive characteristics and sexual history of the respondents involved in the study. Most (90.7%) of the respondents had children.

Majority of the women who currently had children again indicated that they wanted to have one or two more children. About 95.8% of the respondents without children were intending or willing to have children and majority indicated that they would want to have four children or more.

Almost 42.1% of the respondents had not engaged in sexual activity with their partners in the previous month before the study. However, about 20.3% of the respondents had sexual activity only once with their partners in the last month.

About 47.1% of the respondent indicated that it was less important for them to fulfill their sexual desires with their partners whereas 12.7% opined that it was very important to them. One hundred and twenty-seven clients representing 31.3% had had sexually transmitted infections over the last six months whereas most (68.7%) of the respondents had not. More than 90% however sought medical attention from the health facility when they had sexually transmitted disease.

Table 4.2 Respondents' reproductive health and sexual activity history

Variable	Frequency (n)	Percentage (%)
Have children (n=407)		
<input type="checkbox"/> Yes	369	90.7
<input type="checkbox"/> No	37	9.3
Number of Children (n=382)		
<input type="checkbox"/> One	106	27.8
<input type="checkbox"/> Two	116	30.4
<input type="checkbox"/> Three	71	18.6
<input type="checkbox"/> 4 and above	89	23.4
Intend to have children (n= 24)		
<input type="checkbox"/> Yes	23	95.8
<input type="checkbox"/> No	1	4.2
Sexual activity in the last month (n=399)		
<input type="checkbox"/> once a month		
<input type="checkbox"/> once a week	81	20.3
<input type="checkbox"/> twice a week	66	16.5
<input type="checkbox"/> once a day	77	19.3
<input type="checkbox"/> none	3	0.8
	168	42.1

During the last month, how often have you had sexual desires involving a partner? (n=413)

<input type="checkbox"/> once a month	65	15.7	23.0
<input type="checkbox"/> once a week	95	25.7	
<input type="checkbox"/> twice a week	106	3	0.7
<input type="checkbox"/> once a day	144	34.9	
<input type="checkbox"/> none			

Importance of fulfilling your sexual desire through an activity with your partner (n=410)

<input type="checkbox"/> very important	52	12.7	40.2
<input type="checkbox"/> important	165	47.1	
<input type="checkbox"/> less important	195		

Have you had any sexually transmitted infections in the last six months? (n=400)

<input type="checkbox"/> yes	127	31.3	
<input type="checkbox"/> no	273	68.7	

Has your partner had any sexually transmitted infections in the last six months?(n=250)

<input type="checkbox"/> yes	38	10.7	49.7
<input type="checkbox"/> no	176	39.6	
<input type="checkbox"/> don't know	140		

Did you seek medical attention from health facility (n=127)

<input type="checkbox"/> Yes	114	91.9	
<input type="checkbox"/> No	13	8.1	

Source: Field data, 2013

4.3 Family and social characteristics

Table 4.3 and Figure 4.1 describe the family and social characteristics of clients involved in this study. More than 95% of the respondents had only one sexual partner and almost half (49.2%) were wives to their sexual partners. About 41% had been in their current relationship for less than 5 years whereas the majority had been in it for more than 5 years. About 32% had been in their current relationship for 10 years or more.

About 75% depended on the partners for social and financial support. However, about 27% had not disclosed their HIV status to their sexual partners or family member. Reasons cited for non-disclosure of HIV status included not trusting anyone (32.1%), fear of stigma (11.2%), fear of rejection by family (44.7%), being the most cited. Majority, 80.9% of those who have disclosed their status received some form of support from their partners

or family. Almost half of the respondents knew the HIV status of their sexual partners and 40.2% and 59.8% indicated their partners were positive and negative respectively. Majority, 52.2% of the clients disclosed that they do not use condom with their husbands and reasons cited included not enjoying sex with condom, wanting a child and not having a partner.

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Table 4.3 Respondents' family and social characteristics

Variables	Frequency	Percentage
Number of sexual partners (n=287)		
<input type="checkbox"/> One	273	95.1
<input type="checkbox"/> Two	11	3.8
<input type="checkbox"/> Three	3	1.1
Relationship with your current sexual partner (n=378)		
<input type="checkbox"/> husband	186	49.2
<input type="checkbox"/> consensual partner	18	4.8
<input type="checkbox"/> boyfriend/other	92	24.3
<input type="checkbox"/> none	82	21.7
How long have you been in this relationship? (n=313)		
<input type="checkbox"/> 0-4years	127	40.6
<input type="checkbox"/> 5-9years	86	27.5
<input type="checkbox"/> 10years or more	100	31.9
Does your sexual partner have other relationships in the past twelve month? (n=325)		
<input type="checkbox"/> yes	56	17.2
<input type="checkbox"/> no	95	29.3
<input type="checkbox"/> don't know	174	53.5
Do you depend on your partner for any form of financial support or upkeep? (n=353)		
<input type="checkbox"/> yes	265	75.1
<input type="checkbox"/> no	88	24.9
have you disclose your HIV status to your sexual partner or family (n=412)		
<input type="checkbox"/> yes	301	73.1
<input type="checkbox"/> no	111	26.9
If yes do you do you receive any form of support from your partner or family? (n=341)		
<input type="checkbox"/> Yes	276	80.9
<input type="checkbox"/> No	65	19.1

Do you know your sexual partners HIV status? (n=349)

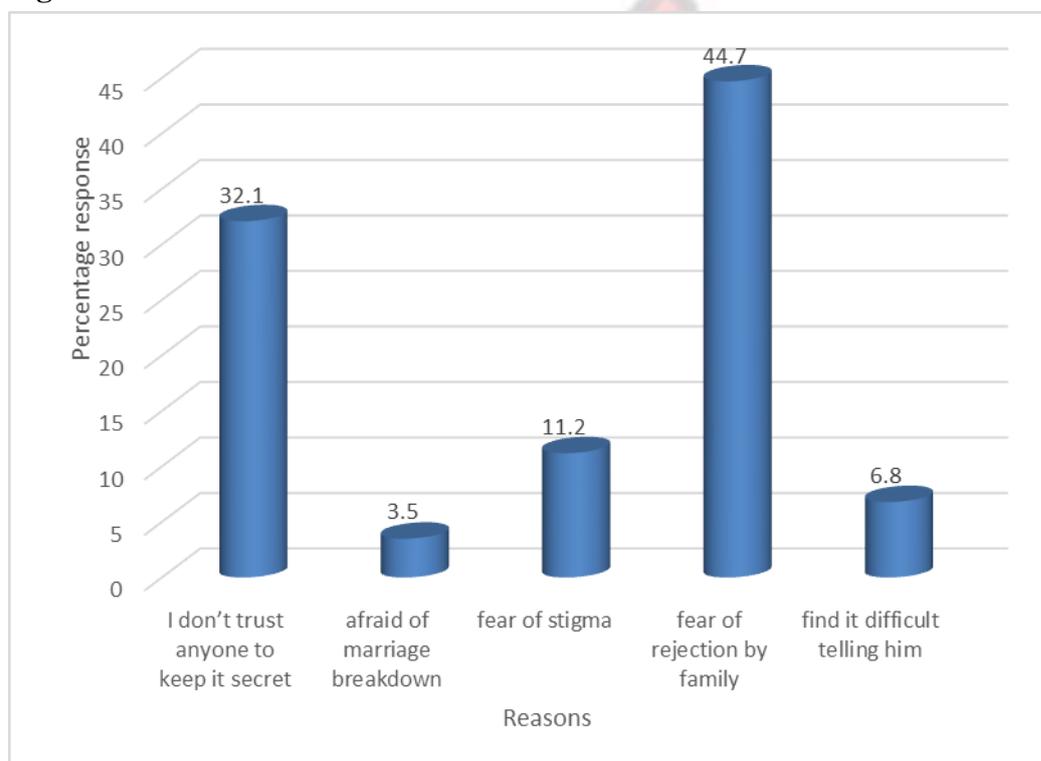
<input type="checkbox"/> yes	174	49.9
<input type="checkbox"/> no	175	50.1

Do you use a condom with your partner? (n=347)

Yes	166	47.8
No	181	52.2

Source: Field data, 2013

Figure 4.1 Reasons for non-disclosure of HIV status



Source: Field data, 2013

Table 4.4 Respondents' contraceptive knowledge and practices

Variables	Frequency	Percentage
Does your partner know about your use of contraceptives? (n=215)		
<input type="checkbox"/> yes	127	65.1
<input type="checkbox"/> no	68	34.9
Does he know the method you are using? (n=212)		
<input type="checkbox"/> yes	121	57.1
<input type="checkbox"/> no	91	42.9
Does your sexual partner approve the use of family planning methods? (n=241)		
<input type="checkbox"/> approves	108	44.8
<input type="checkbox"/> disapproves	133	55.2
Do you discuss family planning with your sexual partner? (n=360)		
<input type="checkbox"/> yes	112	31.1
<input type="checkbox"/> no	248	68.9
Do you plan to have children? (n=394)		
<input type="checkbox"/> yes	172	43.7
<input type="checkbox"/> no	222	56.3
If no, are you currently using any form of family planning method to prevent pregnancy? (n=222)		
<input type="checkbox"/> yes	86	38.7
<input type="checkbox"/> no	136	61.3
What is the reason for your current family planning choice? (n=207)		
<input type="checkbox"/> safe	88	42.5
<input type="checkbox"/> effective(works well)	34	16.4
<input type="checkbox"/> low side effect profile	6	3.0
<input type="checkbox"/> only method known to me	4	1.9
<input type="checkbox"/> only method available	1	0.5
<input type="checkbox"/> affordable	15	7.2
<input type="checkbox"/> convenient to use	11	5.3
<input type="checkbox"/> other	48	23.2
Where do you obtain your family planning service? (n=196)		
<input type="checkbox"/> government hospital	103	52.6
<input type="checkbox"/> private hospital	12	6.1
<input type="checkbox"/> pharmacy/chemical shops	38	19.4
<input type="checkbox"/> other(specify)	43	21.9
Do you have or ever experience side effect with your method of contraceptive? (n=189)		
<input type="checkbox"/> yes	50	26.5

<input type="checkbox"/> no	139	73.5
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If yes, please indicate (n=87)

<input type="checkbox"/> menstrual changes	43	49.4 9.2
<input type="checkbox"/> weight gain or loss	8	10.4 5.7
<input type="checkbox"/> headache	9	12.6
<input type="checkbox"/> acne	5	2.3
<input type="checkbox"/> dizziness	11	8.1
<input type="checkbox"/> change in sex drive	2	2.3
<input type="checkbox"/> nausea and vomiting	7	
<input type="checkbox"/> breast tenderness	2	

Do you attribute these experiences to the contraceptive method?

(n=132)

<input type="checkbox"/> yes	60	45.5
<input type="checkbox"/> no	72	54.5

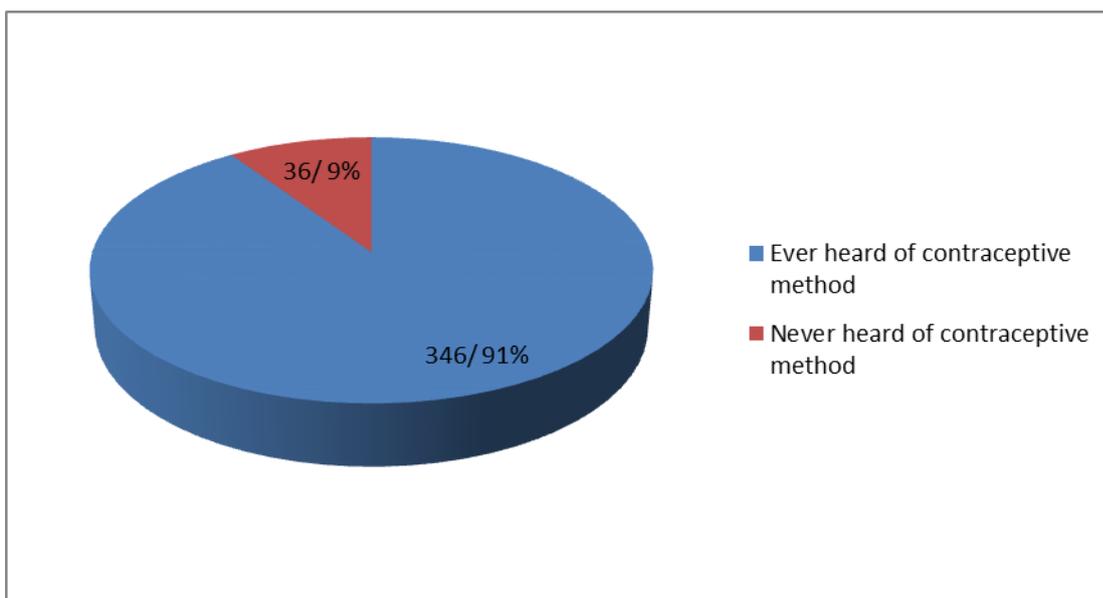
Source: Field data, 2013

4.4 Contraceptive knowledge and practices

Table 4.4 and Figures 4.2 - 4.4 present results of clients' knowledge and practices regarding family planning. As shown in Figure 4.2 and surprisingly, 91% of the HIV positive clients had heard of contraceptive methods. However, only 122 (32%) were using family planning methods as at the time of the study as shown in Figure 4.3.

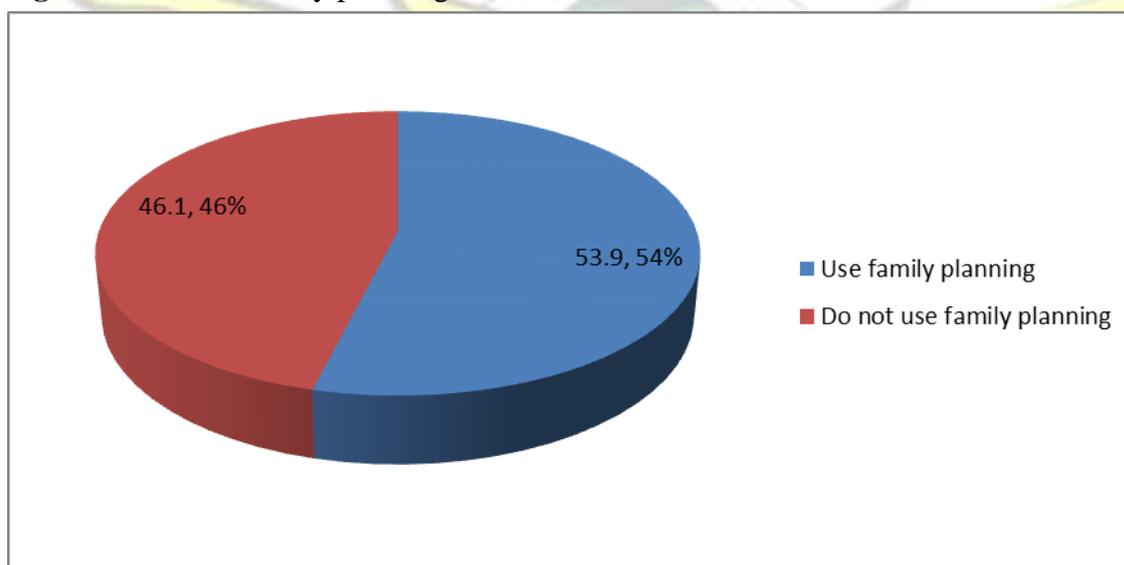
Respondents' reasons for not using contraceptives included 'wanting to have children' and 'not interested in the contraceptives'. As detailed in Figure 4.4, the pill and condom appeared the most heard contraceptive methods among respondents in this study whereas the condom was the most used contraceptive method (47.8%). None of the clients had heard of or used the foam or jelly and none was using the diaphragm, sterilization, lactational amenorrhoea and periodical abstinence. The most cited sources of information on family planning were the TV and radio.

Figure 4.2 Awareness of contraceptives



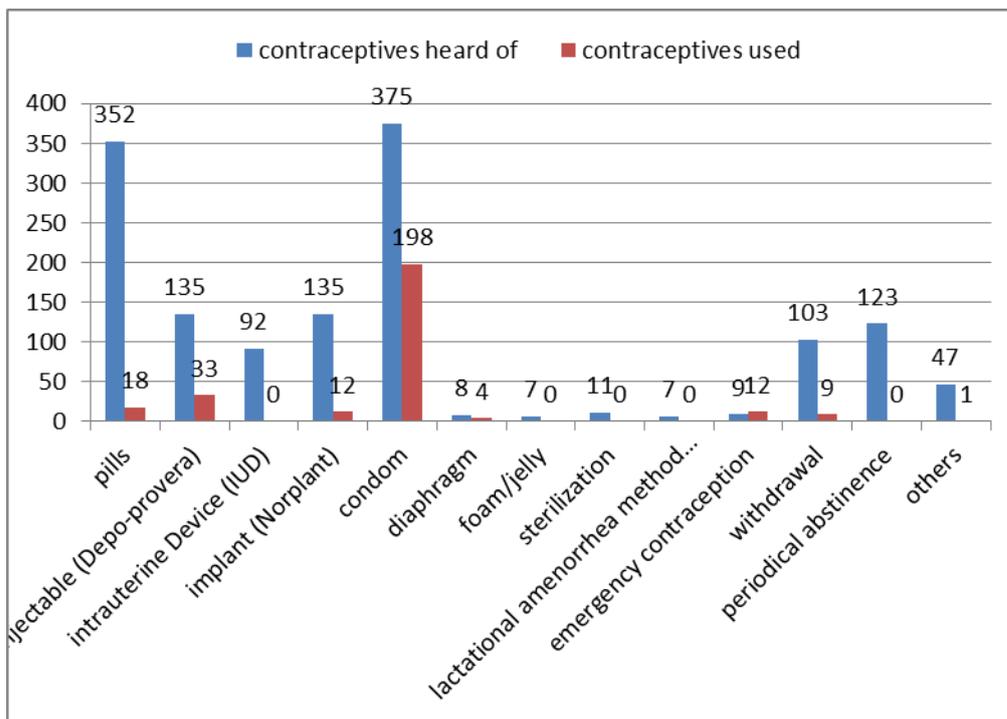
Source: Field data, 2013

Figure 4.3 Use of family planning methods



Source: Field data, 2013

Figure 4.4 Contraceptive methods known and used



Source: Field data, 2013

As shown in Table 4.4, majority, 65.1% of the clients disclosed that their partners knew about their use of contraceptives although 55.5% stated that their partners disapprove of their use of family planning methods. Most of the clients (68.9%) however disclosed that they do not discuss family planning with their partners. About 56% of respondents in this study opined that they do not plan to have children. However, only 38.7% of these clients were using a family planning method to prevent pregnancy. Reasons cited for not using family planning methods included safety of the method (42.4%), being effective (16.5%), and being affordable (7.2%).

More than 70% of the clients (73.5%) stated that they have never experienced side effects with their method of contraceptives whereas 26.5% indicated that they had experienced side effects. Menstrual changes were the most cited side effects among the respondents (49.4%). Other side effects stated among respondents included menstrual changes, weight gain or loss and dizziness. Majority however did not attribute their side effect experiences to their use of contraceptive methods.

4.5 Quality of service provision

Table 4.5 presents results of clients' experiences with service provision at family planning centres. Majority (71.1%) of the respondents viewed the attitude of service providers as friendly while 55% also disclosed that they were informed by the healthcare provider of the side effects of the family planning method. About 42.3% disclosed that they were not assured of confidentiality and were not given enough privacy at the service centre. About 65% indicated that they always get their preferred method at the facility and 49.7% also opined that health staffs provide enough counseling on the methods and expected side effects. Generally, majority of the HIV positive clients rated their satisfaction of the family planning services as good whereas 32.9% rated it as average. Views of respondents on ways to improve provision of family planning services included increase in the number of FP provision centres, motivating FP providers, providing more FP centres and increased training of providers as shown in Figure 4.5.

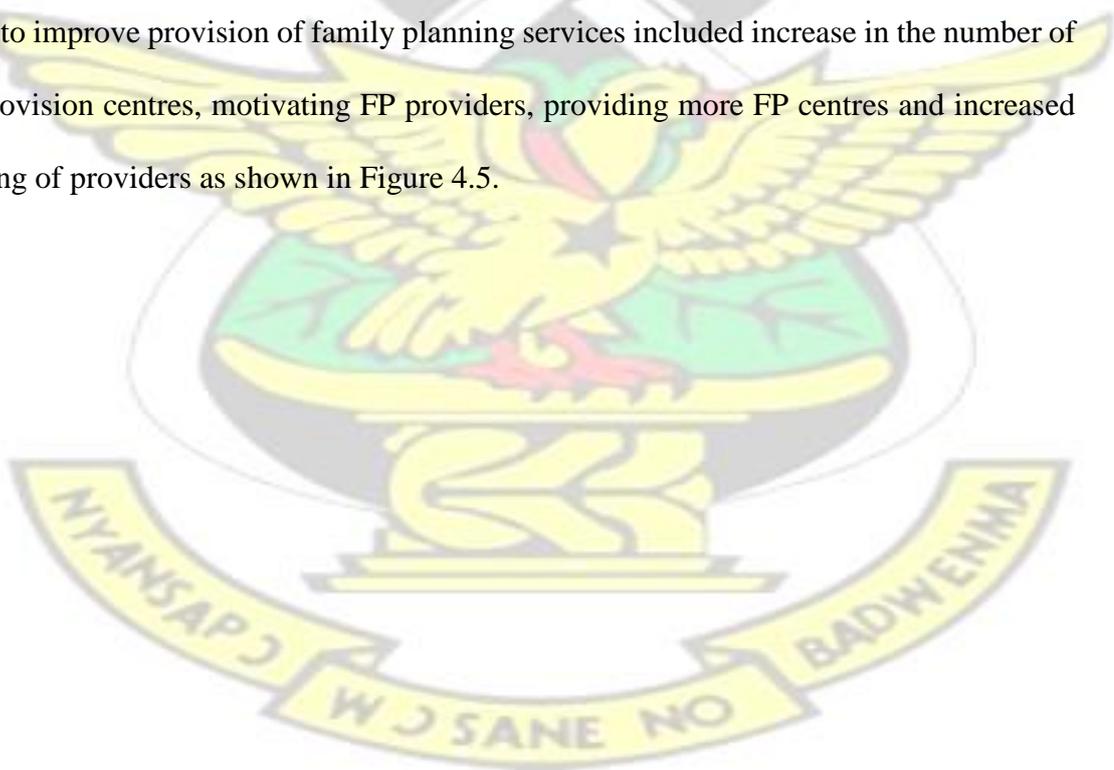
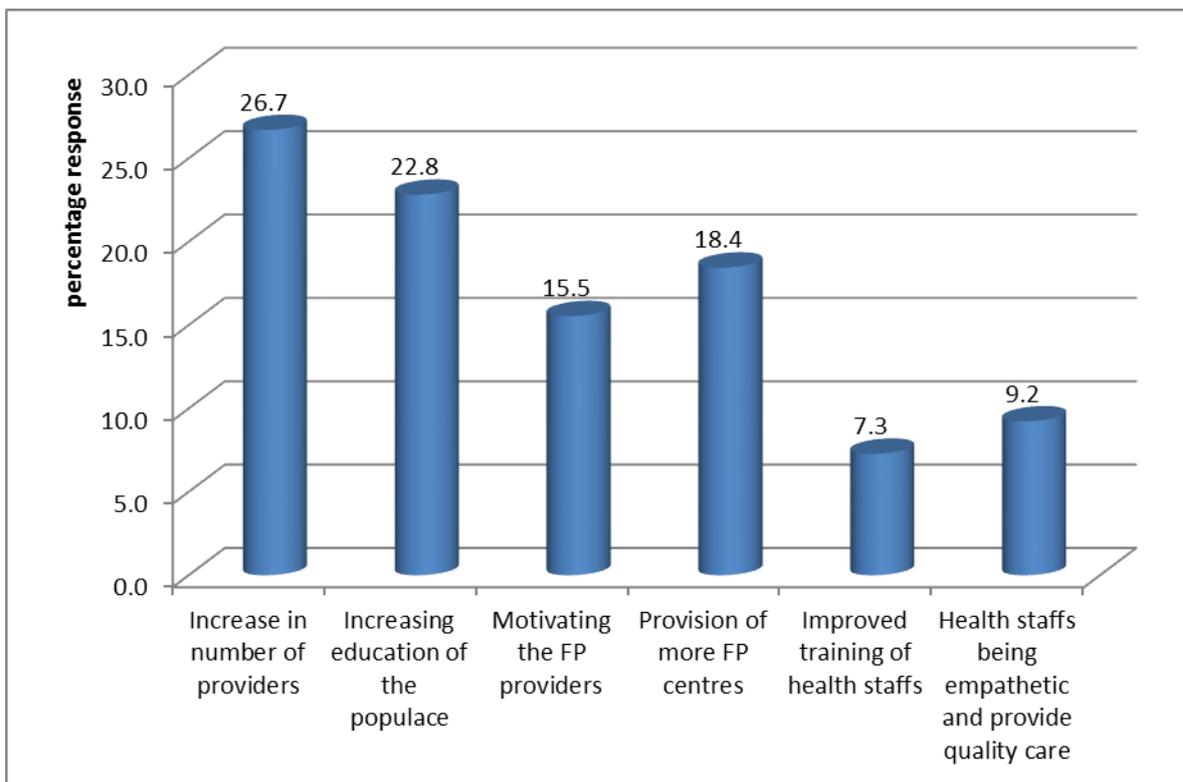


Table 4.5 Clients' experiences of quality of family planning service provision

Variables	Frequency	Percentage
What is your assessment of the family planning service provider's attitude towards you? (n=135)		
<input type="checkbox"/> friendly	96	71.1
<input type="checkbox"/> unfriendly	11	8.2
<input type="checkbox"/> don't know	28	20.7
Were you ever informed by healthcare provider about side effects the family planning method? (n=149)		
<input type="checkbox"/> yes	82	55.0
<input type="checkbox"/> no	41	27.5
<input type="checkbox"/> don't know	26	17.5
Were you informed about how to use the method effectively? (n=149)		
<input type="checkbox"/> yes	87	58.4
<input type="checkbox"/> no	34	22.8
<input type="checkbox"/> don't know	28	18.8
Were you assured of the confidentiality and given enough privacy? (n=149)		
<input type="checkbox"/> yes	58	38.9
<input type="checkbox"/> no	63	42.3
<input type="checkbox"/> don't know	28	18.8
Do you always get your preferred method at the facility? (n=148)		
<input type="checkbox"/> yes	97	65.5
<input type="checkbox"/> no	22	14.9
<input type="checkbox"/> don't know	29	19.6
Do health staffs provide enough counselling on the methods and expected side effects? (n=149)		
<input type="checkbox"/> yes	74	49.7
<input type="checkbox"/> no	47	31.5
<input type="checkbox"/> don't know	28	18.8
How is/was your general satisfaction of the family planning service provided to you? (n=143)		
<input type="checkbox"/> bad	4	2.8
<input type="checkbox"/> average	47	32.9
<input type="checkbox"/> good	75	52.4
<input type="checkbox"/> don't know	17	18.9

Source: Field data, 2013

Figure 4.5 Ways of improving service provision at FP centres

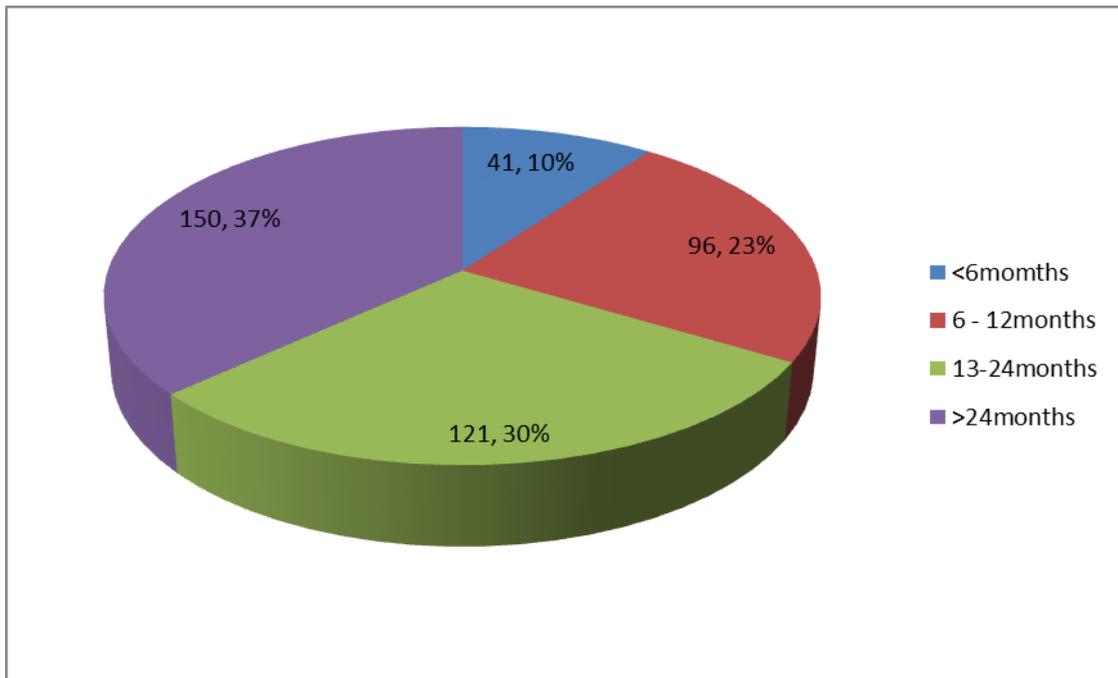


Source: Field data, 2013

4.6 Clinical factors

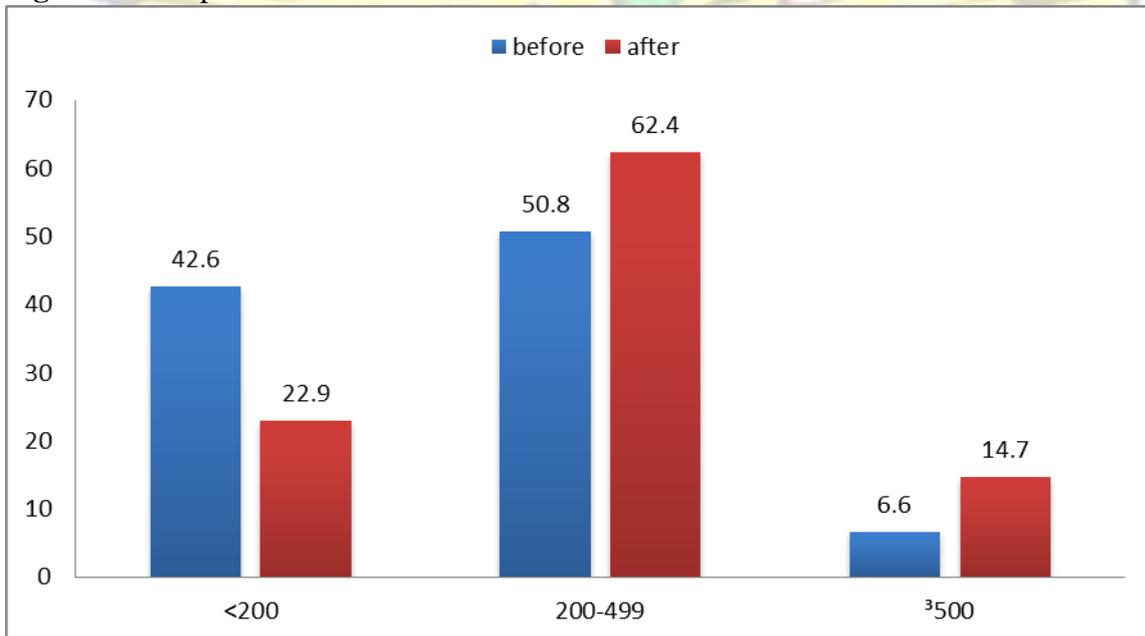
As shown in Figure 4.6, majority of the clients have been on ART for more than 12 months. Specifically, 30% had been on ART for 13 to 24 months, 37% for more than 24 months whereas 10% have been on it for less than 6 months. The mean CD4 counts before and after clients were put on ART was 229.9 and 312.6 respectively. Majority of the respondents had CD4 counts of 200 to 400 before and after being put on ART as shown on Figure 4.7. Respondents again shared their opinions on ways to improve contraceptive and family planning uptake among HIV positive women. Suggestions included increasing mass education, provision of FP services at ART centres, and giving of free contraceptives

Figure 4.6 Duration on ART



Source: Field data, 2013

Figure 4.7 Respondents CD4 counts



Source: Field data, 2013

4.7 Factors influencing use of FP

As shown in Table 4.6, use of family planning services was significantly higher among HIV positive clients who assessed healthcare from public facilities as compared to those who visited private facilities (43.9% versus 15.0%).

Table 4.6 Use of family planning among respondents from public and private health facilities

Facility	Use family	Do not use	Total	Chisquare	p-value
	planning N (%)	family planning N (%)			
□ Public	91 (43.9)	116 (56.1)	207 (100)	41.837	0.0001
□ Private	31 (15.0)	176 (85.0)	207 (100)		
Total	122	292			

Source: Field data, 2013

Test: Pearson Chi-square

4.7.1 Socio-demographic factors influencing use of family planning

Table 4.7 presents results of the influence of HIV positive clients' socio-demographic characteristics on their use of family planning services among private and public facilities.

Among respondents who utilized public facilities, use of FP services was influenced by age, marital status and religion of the HIV positive clients. Use of FP decreased with increasing age of HIV positive clients and was higher among those who were married as compared to those who were single (51.3% versus 19.4%). Among respondents in private facilities, use of FP was significantly influenced by age and educational background of respondents. Use of FP was higher among respondents who had tertiary education as compared with those with no formal education (33.3% versus

13.6%; $p=0.040$). The type of occupation of the HIV positive clients did not influence use of FP in this study.

Table 4.7 Bivariate analysis of socio-demographic factors influencing use of FP among HIV positive women

Variables	Public facility		p-value	Private facility		p-value		
	Use FP %	Don't use FP %		Use FP %	Don't use FP %			
Age								
<input type="checkbox"/> <25	75.0	54.4	0.001	0.0	100.0	0.003		
<input type="checkbox"/> 25-34	38.9	45.6		21.1	2.7		78.9	97.3
<input type="checkbox"/> 35-44	11.1	61.1		22.9			77.1	
<input type="checkbox"/> >44		88.9						
Marital status								
<input type="checkbox"/> Single/separated/divorced	19.4	51.3	0.001	15.1	11.0	0.113		
<input type="checkbox"/> married	74.1	25.9		26.8	73.3			
<input type="checkbox"/> cohabitation								
Education level								
<input type="checkbox"/> no formal	66.7	33.3	0.133	13.6	86.4	0.040		
<input type="checkbox"/> Primary/JSS	45.2	54.8		19.5	80.5			
<input type="checkbox"/> secondary/tech/voc/A-level/O-level	37.3	62.7		3.7	96.3			
<input type="checkbox"/> tertiary	33.3	66.7		33.3	66.7			
Region								
<input type="checkbox"/> Christian	39.5	60.5	0.004	13.9	86.0	0.445		
<input type="checkbox"/> Muslim	69.0	31.0		21.4	78.6			
<input type="checkbox"/> Traditional	100.0	0.0		-	-			
What is your main occupation								
<input type="checkbox"/> Artisan (carpenter, mason, plumber, driver, etc)	62.5	37.5	0.142	11.5	88.5	0.630		
<input type="checkbox"/> farmer	16.7	60.0		83.3	40.0		22.2	77.8
<input type="checkbox"/> civil/public servant	43.2	56.8		-	-			
<input type="checkbox"/> trader/businessman	35.1	64.9		13.9	86.1			
<input type="checkbox"/> unemployed				11.8	88.2			

Source: Field data, 2013

Test: Fischer's exact

4.7.2 Social and family factors influencing use of family planning

Table 4.8 also presents results of the influence of family and social characteristics on the use of FP among HIV positive clients. Respondents' relationship with current sexual partner, dependence on partner for financial support, knowledge of and partners' HIV status influence use of FP among those who assessed healthcare form public facilities.

The percentage of respondents who use FP were higher among HIV positive clients who depended on their partners for financial support or upkeep as compared to those who did not (56.2% versus 28.6%; $p=0.001$). HIV positive women who knew their partners HIV status and those whose partners were HIV positive were more likely to use FP methods as detailed in Table 4.7. Among clients from private facilities, having children, relationship with current partners, length of relationship and knowledge of partners HIV status influenced use of FP. None of the respondents who had no child utilized FP as compared to 17% of those who had children. Use of FP was again low among those who had been in relationship for 10 years or more as compared to those who were less than 4 years in relationship (5% versus 12.3%).

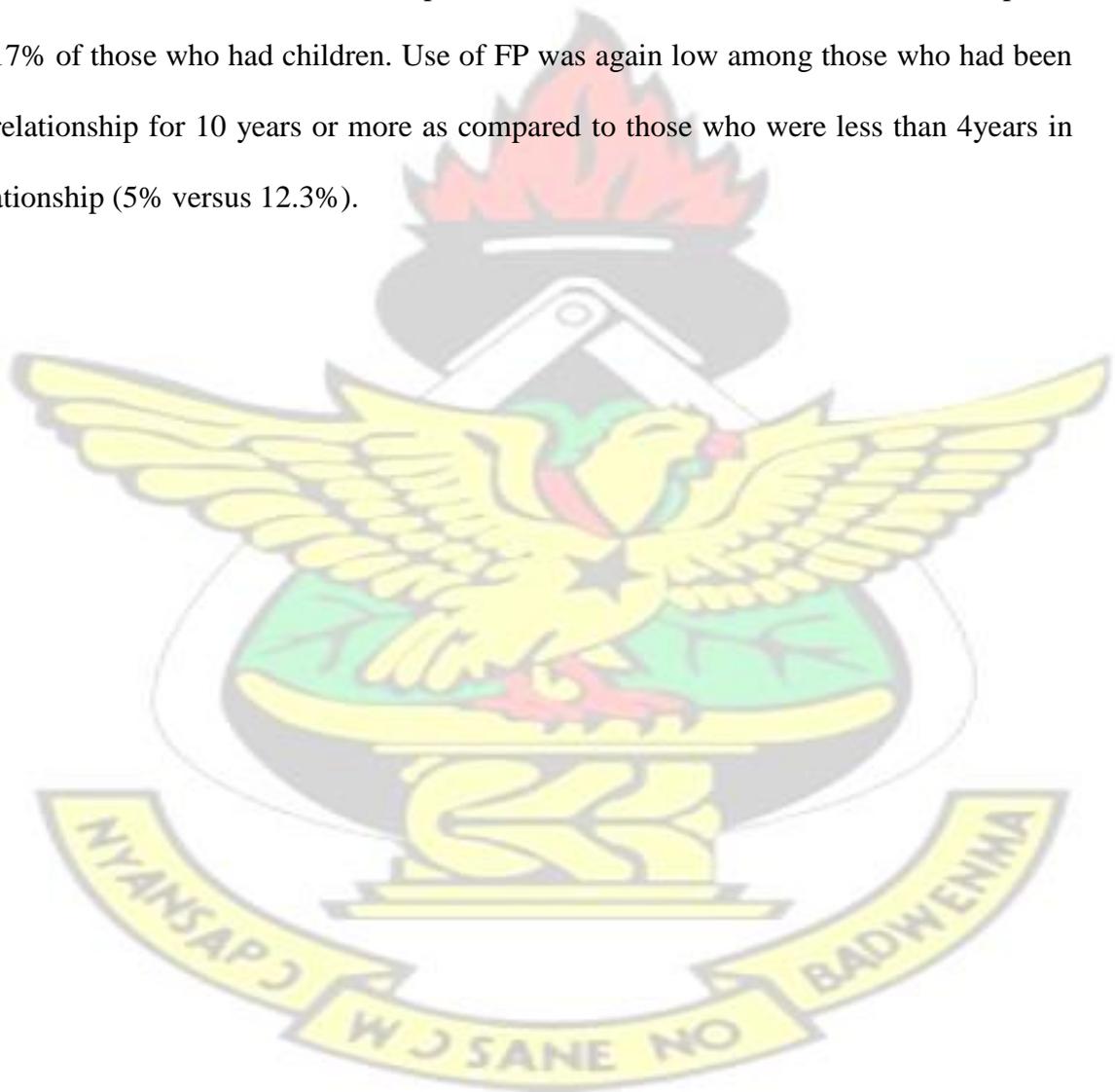


Table 4.8 Bivariate analysis of social and family factors influencing use of FP among HIV positive women

Variables	Public facility		p-value	Private facility		p-value
	Use FP %	Don't use FP %		Use FP %	Don't use FP %	
Do you have children?						
<input type="checkbox"/> Yes	46.0	54.0	0.073	17.0	83.0	0.040
<input type="checkbox"/> No	18.8	81.2		0.0	100.0	
Number of sexual partners						
<input type="checkbox"/> One	55.4	44.6	0.370	14.9	85.1	
<input type="checkbox"/> Two	36.4	66.7		-	-	
<input type="checkbox"/> Three	33.3			-	-	
Relationship with your current sexual partner						
<input type="checkbox"/> husband	53.3	46.7	0.001	11.4	88.6	0.028
<input type="checkbox"/> consensual partner	63.4	43.5		23.9	100.0	
<input type="checkbox"/> boyfriend/other	56.5	100.0		3.9	76.1	
<input type="checkbox"/> none	0.0				96.1	
How long have you been in this relationship						
<input type="checkbox"/> 0-4years	51.4	48.6	0.955	12.3	87.7	0.030
<input type="checkbox"/> 5-9years	54.2	48.1		29.0	95.0	
<input type="checkbox"/> 10years or more	51.9			5.0		
Sexual partner have other relationships in the past 12 month						
<input type="checkbox"/> yes	60.0	40.0	0.537	19.2	80.8	0.779
<input type="checkbox"/> no	46.7	50.0		13.8	86.2	
<input type="checkbox"/> don't know	50.0					
Dependence on partner for any form of financial support or upkeep						
<input type="checkbox"/> yes	56.2	43.8	0.001	12.7	87.3	0.280
<input type="checkbox"/> no	28.6	71.4		19.5	80.5	
have u disclose your HIV status to your sexual partner or family						
<input type="checkbox"/> yes	43.5	56.5	0.696	12.9	87.1	0.172
<input type="checkbox"/> no	46.5	53.5		20.8	79.2	
Receive any form of support from your partner or family?						
<input type="checkbox"/> Yes	46.8	53.2	0.473	16.8	83.2	0.987
<input type="checkbox"/> No	40.0	60.0		16.7	83.3	
Do you know your sexual partners HIV status						
<input type="checkbox"/> yes	61.6	38.4	0.005	21.3	78.7	0.042
<input type="checkbox"/> no	38.2	61.8		8.4	91.6	
If yes partners HIV status						
<input type="checkbox"/> Negative	57.1	42.9	0.043	9.5	90.5	0.510
<input type="checkbox"/> Positive	70.7	29.3		17.5	82.5	

4.7.3 Clinical factors influencing use of family planning

Table 4.9 presents results of the influence of clinical characteristics of HIV positive women on the use of FP. The length of being on ART and CD4 counts before initiating ART did not influence use of FP among respondents in this study. However, CD4 counts after being on ART influenced use of FP among HIV positive clients from both private and public facilities. Among the public facilities, use of FP was higher among those whose CD4 counts were 500 and above as compared to those with CD4 counts less than 200 (94.4% versus 64.5%; $p=0.001$).

Table 4.9 Bivariate analysis of clinical factors influencing use of FP among HIV positive women

Variables	Public facility		p-value	Private facility		p-value
	Use FP	Don't use FP		Use FP	Don't use FP	
	%	%	%	%		
Length on ART						
□ <6months	65.0	35.0		76.2	23.8	
□ 6-12months	59.1	40.9	0.660	78.9	21.2	0.128
□ 13-24months	50.8	49.2		83.9	16.1	
□ >24months	57.3	42.7		92.0	8.0	
CD4 counts before ART						
□ <200	60.0	40.0	0.107	50.0	50.0	0.067
□ 200-499	48.8	51.2		14.3	85.7	
□ 500 and above	85.7	14.3		33.3	66.7	

CD4 counts after ART

□ <200	64.5	35.5	0.001	20.0	80.0	0.036
□ 200-499	43.4	56.6		60.0	40.0	
□ 500 and above	94.4	5.6		0.0	100.0	

*Source: Field data, 2013**Test: Fischer's exact***4.7.4 Multivariate analysis**

Table 4.10 presents results of the stepwise regression analysis of the factors influencing use of FP among HIV positive women. Model 1 present's results of socio-demographic characteristics and model 2 involves the combined influence of socio-demographic and social factors. Among HIV positive women who utilized public facilities, marital status and religion influenced use of FP (model 1). HIV positive clients who were married were 6 times more likely to use FP as compared to those who were single (OR=6.0; $p<0.001$). HIV positive women who were cohabitating with their partners also showed increase likelihood of using FP as compared to those who were single and this relationship was again observed in model 2. The religious background of the HIV positive clients also influence their use of FP with Muslims showing an increased likelihood of using FP in both model 1 and 2 (OR=4.3 and 10.0 respectively). The educational background of HIV positive women from public facilities influenced use of FP in model 2 although this was not observed in model 1. As compared to those with no formal education, HIV positive women with tertiary education were less likely to use FP (OR=0.2; $p<0.05$). The various odds of using FP shown by the social and family factors could not reach significant levels.

Among HIV positive women who accessed healthcare from private health facilities, only religions background influence use of FP in model 1. Similar to respondents from public

health facilities, Muslims was associated with higher odds of utilizing FP as compared with Christians (OR=4.7; p<0.05). In model 2, only the years of being in a relationship with current partner and partners HIV status influenced use of FP. The results show increased odds of using FP with increasing length of relationship. As compared to those who had been in the relationship for less than 4 years, HIV positive women who were in relationship for more than 8 years were 8 times more likely to use FP. The odds of using FP was 8.4 times higher among clients whose partners were HIV positive as compared to those whose partners were HIV negative (OR=8.4; p<0.05).

Table 4.10 Results of multivariate analysis of factors influencing use of family planning

Variables	Public facility		Private facility	
	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Age (ref= <25)				
□ 25-34	1.2 (0.1, 12.9)	0.6 (0.1, 22.6)	0.2 (0.02, 18.5)	1.7 (0.01, 19.3)
□ 35-44	0.9 (0.1, 11.7)	(0.05, 10.4)	(0.3, 12.9)	-
□ >44	-	0.3 (0.004, 2.2)	2.3 (0.04, 11.7)	7.9 (0.3, 25.2)
Marital status (ref =Single)				
□ married	6.0 (2.2, 16.1)***	2.1 (0.1, 17.9)	0.5 (0.2, 1.3)	4.1 (0.7, 12.6)
□ cohabitation	15.5 (3.3, 51.6)**	17.2 (1.5, 75.2)*	1.0 (0.3, 3.1)	4.8 (0.3, 13.5)
Education level (ref =no formal)				
□ Primary/JSS	0.2 (0.04, 1.2)	0.3 (0.01, 2.5)	1.3 (0.1, 7.6)	1.5 (0.09, 12.7)
□ Secondary/tech/voc.	(0.05, 1.6)	0.2 (0.01, 3.3)	2.3 (0.4, 8.9)	-
□ Tertiary	0.1 (0.02, 1.1)	0.2 (0.01, 0.5)*	1.7 (0.07, 10.7)	2.1 (0.03, 7.9)
Region (ref=Christian)				
□ Muslim	4.3 (1.5, 12.1)*	10.0 (1.9, 31.0)**	4.7 (1.2, 13.3)*	1.4 (0.1, 12.9)
Social and family factors				
Relationship with current sexual partner (ref=Husband)				
□ consensual partner		125.9 (0.2, 39.5)		-
□ boyfriend/other		0.7 (0.05, 11.4)		6.8 (0.3, 19.5)
How long have you been in this relationship (ref=0-4years)				
□ 5-9years		3.7 (0.9, 14.9)	4.4 (0.9, 22.2)	2.2 (1.1, 9.6)**
□ 10years or more				7.9 (2.1, 29.9)*
Dependence on partner for any form of financial support or upkeep (ref= Yes)				
□ No		0.7 (0.2, 2.8)		0.3 (0.03, 2.0)

Know your sexual partners HIV status

(ref=yes)

<input type="checkbox"/> No	0.1 (0.01, 1.3)	9.1 (0.3, 31.0)
Partners HIV status (ref=Negative)		
<input type="checkbox"/> Positive	1.9 (0.6, 6.2)	8.4 (1.8, 80.2)*

Source: Field data, 2013

(-) Omitted

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

4.8 Findings from focus group discussions

Two FGDs were conducted, one from each facility. Group one (1) involved participants from the public facility and Group two (2) from the private facility.

4.8.1 Knowledge of contraceptives

Participants in the FGDs expressed their knowledge and understanding of contraceptives. Almost all of the participants in both groups had heard of contraceptives. However, knowledge of specific type of contraception was very low. All the respondents had heard of condom and majority also knew of the pill. Few however had heard of the diaphragm, foam/jelly, implant, intrauterine device and locational amenorrhea.

On the knowledge and understanding of contraceptives, a participant opined;

“I know contraceptives are something we use so that we don’t get pregnant; like the condom” (Group 1).

Another participant explained;

“..If let say someone doesn’t want to get pregnant or transfer STI to anyone or get it from that person, then you use contraceptive to protect yourself” (Group 2).

Most of the participants had their information on contraceptives from the media (radio and television). Few cited health professionals as their sources of information on contraceptives.

A participant disclosed;

“As for me I get most information through the media. Most of the time I watch television adverts and they say something about these things” (Group 2).

A participant from Group 1 also indicated;

“I was informed during counseling of the importance for HIV positive women and partner to use contraceptives especially when the partner is negative “

4.8.2 Use of contraceptives

Very few of the participants from both discussions were using contraceptives. Reasons for use of contraceptives were mostly to prevent pregnancy or spread of HIV.

A participant disclosed;

“I came with my partner for counseling and we were told to use a contraceptive since we don’t want pregnancy anymore. I have children already but I am afraid a new baby will get infected” (Group 2).

Participants who were not using contraceptives also cited non-disclosure of status and discomfort with contraceptive use as major reasons behind their non-use.

Some participants explained;

“At first we were using it but now have stopped. My husband says he doesn’t feel comfortable using it anymore and I don’t want to always force him” (Group 1).

“Me and my partner are all positive so we don’t see the need to use condom or anything. Besides I want to get pregnant. At first I was afraid but now the nurses say the baby can be protected from getting the virus” (Group 2).

4.8.3 Status disclosure and contraceptive use

Almost all participants from both groups had disclosed their status to their partners or a family member. These women attested to receiving some form of support from their partners in terms of transport fares to the facilities and money for upkeep. A participant from Group 2, who had not disclosed her status, however cited fear of divorce if she disclosed her status to her husband. This was however hindering their possible use of contraceptive.

She explained;

“...Hmm, I just can't disclose my status to him. I am waiting for him to come with me to see the nurses so they will do that and counsel us both. I fear what he will do to me if I tell him and I cant tell him to use condom too because we have never used it and it may bring suspicions”

CHAPTER FIVE

DISCUSSION

This section presents a critical examination of the findings of the study. In relation to previous literature and the objectives of the study, explanations for certain patterns, trends, and special cases are presented.

5.1 Introduction

Contraceptive usage is also known to prevent re-infection among partners that leads to development of HIV resistant strains. The demand for contraceptives among HIV positive individuals may however be influenced by a number of factors including the number of children they already have before diagnosis, past pregnancy outcomes, the stage of the disease, concerns about side effects and interaction of the method with HIV status (Baek & Rutenberg, 2005). Previous studies of contraceptive use among HIV positive women in sub Saharan Africa have also shown that overall, contraceptive use among HIV-positive women may be lower than that of uninfected women (Nebie et al, 2001; Desgrees Du-Lou, 2002; 2005). This cross sectional study explored the level of contraceptive usage and unmet need among HIV positive clients in the Kumasi metropolis. The study further assessed the factors influencing contraceptive usage among HIV positive clients in the Kumasi metropolis.

□ Key findings of this study

This study revealed a low prevalence of contraceptive usage among HIV positive women in the Kumasi metropolis although awareness of contraceptives was very high. Only 32%

of HIV positive women studied were using contraceptives and 38.7% of HIV positive women who did not intend to have children were not using a family planning method to prevent pregnancy. Use of family planning services was significantly higher among HIV positive clients who assessed healthcare from public facilities as compared to those who visited private facilities. Outcome of this study further showed the influence of socio-demographic, socio-cultural and clinical factors on utilization of contraceptives among HIV positive women. Use of contraceptives among HIV positive women from public facilities was influenced by age, marital status and religion whereas usage among clients from private facilities was influenced by age and educational level.

5.2 The contraceptive prevalence rate among HIV-positive women in the Kumasi metropolis

This study reported a low percentage of contraceptive usage prevalence among HIV positive women in the Kumasi metropolis. Although awareness of contraceptives was very high, only 32% were using contraceptives. Similarly, the study by Muyindike et al (2012) indicated that 28% of the HIV positive women reported use of contraception at enrollment in Southwestern Uganda. The contraceptive prevalence in this study was however lower than the recent prevalence of contraceptive usage among the general populace in Ghana. According to the World Bank (2013), 34% of women in the reproductive age (15-49 years) were using some method of contraception as at 2011. This supports evidence from previous studies of contraceptive use among HIV positive women in sub Saharan Africa which reported a high contraceptive prevalence among uninfected women as compared to HIV-positive women (Nebie et al, 2001; Desgrees Du-Lou, 2002; 2005). This study outcome was however inconsistent with the study in Nigeria by Oraka et al (2010), where

modern family planning use was significantly higher among HIV positive group than HIV-negative groups (43% vs. 12%, $P < 0.001$).

This study further revealed that the condom (47%) was the most cited contraceptive method heard and used by the HIV positive women followed by the injectable and pill. None of the clients had heard of or used the foam or jelly and none was using the diaphragm, sterilization, lactational amenorrhoea and periodical abstinence one of them used the foam/jelly, lactational amenorrhoea or IUD. This was similar in the qualitative study where knowledge on modern contraceptive methods was very low among participants in the FGDs. This is congruent with GDHS report 2008 report which cited the male condom as the most commonly used modern contraceptive method followed by the pill (10%), while rhythm (12%) was the most widely used traditional method (Ghana Statistical Service et al., 2009). In line with this study outcome, the study by Oraka et al (2010) in Nigeria revealed that condoms were the most commonly used method among HIV positive women. Again, commonly reported methods of contraception among HIV positive women in the study by Muyindike et al (2012), included the use of injectable hormones (52%), condoms (30%), and oral contraceptives (9%).

5.3 The level of unmet need for contraception among HIV positive women on ART and reasons for unmet need

Physical access, cost, lack of accurate information, limited knowledge of available services and psychosocial factors such as fertility preferences, religious traditions, partner communication and fear of side effects have been cited as barriers to use of contraceptives among women with unmet needs (Campbell, Sahin and Potts, 2006). Unmet need among HIV positive clients is a matter of concern that needs to be addressed. According to Conde-

Agudelo et al (2006) unmet need could lead to unplanned pregnancy and unwanted births among HIV positive women, which may in turn result in such negative public health consequences as increased maternal, neonatal, and infant morbidity and mortality.

About 56% of respondents in this study opined that they do not plan to have children. However, 38.7% of these clients were not using a family planning method to prevent pregnancy. This supports previous reports of generally high levels of unmet need for contraception in Ghana including the study by Khan et al. (2007), which showed that 22% of currently married women who wanted to hold-up further childbearing for 2 years or more and 12% who want to stop additional childbearing were not using a method of contraception at the time of the survey.

A study carried out in Lesotho on desire for children and unmet need for contraception among HIV positive women also revealed that, unmet need for contraception was 31.3%. This percentage was however higher than the percentage of unmet need among the HIV negative women (44.3%). Similar to this study, contraceptive use of HIV positive women was found to be 39% in a study carried out by the Desgrees-Du-Lou (2002) to assess contraceptive use, protected sexual intercourse and incidence of pregnancies among African HIV-infected women in Abidjan.

Reasons cited for not using family planning methods included safety of the method (39.6%) and being effective (15.3%). The cost of contraceptives was also cited as reason for not using contraceptives among women in this study. About 6.8% of the women not using contraceptives disclosed that the contraceptives were expensive. A study by Castle

(2003) indicated that most male partners prefer the condom because it is easy to access and much affordable.

5.4 Factors influence contraceptive usage among HIV positive clients in public and private facilities

Use of family planning services was significantly higher among HIV positive clients who assessed healthcare from public facilities as compared to those who visited private facilities (43.9% versus 15.0%).

5.4.1 Socio-demographic factors influencing use of contraceptive use

The outcome of this study indicates the influence of some socio-demographic characteristics on the use of contraceptives among HIV positive clients. This confirms previous studies including the study in Rwanda by Ademayi et al (2011) which found that there were significant associations between contraceptive usage and sociodemographic characteristics. This study revealed an influence of age on contraceptive usage among respondents from both private and public facilities in the bivariate analysis. Use of FP decreased with increasing age of HIV positive clients among respondents from public facilities. This was consistent with the study by Chibwasha and others in Zambia which also found age to be associated with successful access to contraceptive services. In their study, older women (≥ 35 years) had lower odds of accessing contraceptive services than women 16–24 years (AOR: 0.49; 95% CI: 0.25–1.00) (Chibwasha et al, 2011).

Again, age of HIV positive women was associated with contraceptive use in the study by Muyindike et al (2010) in Southwestern Uganda where age (less than 24 years inclusive) was independently associated with increase odds of contraception. The study by Kaida et al (2010) on contraceptive use and method preference among women in Soweto, South

Africa also found that age of the HIV positive women significantly influence the use of contraceptives. The relationship between age and contraception was however different among HIV positive clients from private facilities where use of contraceptives was lowest among respondents who were younger (<25 years) as compared to those above 44 years. This could be explained by issues stigma associated with contraceptive use among young people. In addition they might not have enough resources to meet the health provider's fee and transportation costs if they were required (Nakazzi, 2002).

The marital status of HIV positive clients in the public facilities also influenced their use of contraceptives. Contraceptive prevalence was higher among those who were married as compared to those who were single and there were increased odds of utilizing contraceptives among respondents who were married or cohabitating as compared to those who were single. This could be as a result of increased sexual activity among HIV positive women who were married or cohabitating as compared to those single. This is consistent with the study by Muyindike et al (2012) in South western Uganda where the odds of contraceptive use among single and previously married women remained significantly lower than that among married women. Again, the study by Desgrees-Du-Lou et al (2002) in Cote d'Ivoire also found marital status of HIV positive women to be significantly related to contraceptive use. The outcome of this study was however inconsistent with the study in Uganda by Allen et al (1993) where being single was significantly associated with more frequent use of hormonal contraceptives as compared to married women.

The educational level of HIV positive women also influenced their contraceptive usage.

Use of FP was higher among respondents who had tertiary education as compared with those with no formal education. Congruent to this study, having at least 5 years of schooling increased likelihood of using hormonal contraceptive. Highly educated and working women showed a marked preference for oral contraceptives (Allen et al, 1993). This could be explained on the basis of the influence of education on maternal decision making. Increased education has an influence on the woman's health seeking behavior and women with higher education are more likely to attend ANC and deliver at the health facility. This means that once they deliver from a health facility the chances that a woman will be exposed to the various methods of family planning by the health service provider is high (Robinson, 2002). Again, the study by Chibwasha et al (2011) in Zambia, also found consistent results. The educational level of HIV positive women was significantly associated with contraceptive use and HIV positive mothers who had completing secondary education were more likely to use contraceptives as compared to other counterparts.

This study revealed no significant association between occupation and use of contraceptives among HIV positive patients in the Kumasi metropolis. This was however not in line with the study by Allen et al (1993), on pregnancy and contraception use among urban Rwandan women after HIV Testing and Counseling which also found out that, factors associated with more frequent use of hormonal contraceptives included having a salaried job. In similar vein, the study by Muyindike et al (2012) also found income to be significantly with contraceptive use. HIV positive women who earned more income (>250,000 Uganda shillings/month) were more likely to use contraceptives. The study by MacPhail et al (2007) also reported an association between employment status and contraceptive use among women although this was not observed in this study.

5.4.2 Socio-cultural factors

This study found significant associations between some social factors and use of contraceptives among HIV positive clients in the Kumasi metropolis. This study reported an influence of relationship with sexual partner and use of contraceptives among HIV positive clients receiving care at both private and public facilities. Similarly, there was evidence of association between contraceptive use and type of relationship with last sex partner in the study by MacPhail et al (2007).

Clients' dependence on their partners also influences their use of contraceptives in this study. The percentages of respondents who use FP were higher among HIV positive clients who depended on their partners for financial support or upkeep as compared to those who did not (56.2% versus 28.6%). This could be as a result of the fact that HIV positive women who receive support from their partners were much empowered economically and could be able to acquire contraceptives.

Status disclosure is difficult for some HIV positive women especially in this setting where stigmatization is still prevalent in our communities. Women who are able to disclose status to their partners could adopt more positive lifestyles including the use condom to prevent secondary infections and pregnancy. According to this study, HIV positive women who knew their partners HIV status and those whose partners were HIV positive were more likely to use FP methods. In the qualitative study, some participants explained their inability to disclose their status to their partners. This they indicated has prevented them from using contraceptives with their partners. The study of

Contraceptive use and associated factors among women enrolling into HIV care in Southwestern Uganda by Muyindike et al (2012) however reported inconsistent results whereby HIV disclosure was not associated with contraceptive use.

As indicated by Shah (2003), attitudes towards childbearing and changes in sexual and contraceptive practices among women are affected by their ability to make decisions concerning their reproductive health and rights. HIV positive women, equally have desire to have children. This means that the number of children one has could influence their decision to use contraceptive, which could prevent pregnancy. HIV positive women who might still want to have babies might not use contraceptives. On the other hand, clients who already have their expected number of children might consider using contraceptives to prevent sero-infections. This study also revealed significant associated between having children and using contraceptives among HIV positive clients. None of the respondents who had no child utilized FP as compared to 17% of those who had children.

This was again evident in the qualitative study where participants who were not using any form of contraceptive were doing so because of their intentions to have children. Intentions to have children have also been reported to influence contraceptive usage as reported in the study by Schoemaker (2005) where women who wanted two or fewer children had higher odds of using a modern method. Outcome of this study is again consistent with the study by Kaida et al (2010) on contraceptive use and method preference among women in Soweto, South Africa, where having two or more living children, and expressing an intention not to have more children remained most strongly associated with contraceptive use. The study of in Southwestern Uganda by Muyindike et al (2012) also reported parity

(having 3 or more living biological children) to be independently associated with increased odds of contraception.

5.4.3 Clinical factors associated with use of contraceptives among HIV positive clients

This study further assessed the relationship between clients' length on ART and CD4 counts on their use of contraceptives. The study outcome revealed no significant difference in the contraceptive use of HIV positive clients from both public and private facilities with respect to their length of being on ART and CD4 counts before initiating ART among respondents. The prevalence of contraceptive use remained steadily for all lengths of time among respondents from both private and public facilities. This was consistent with the recent study by Kaida et al (2010), which also reported no clear association between duration of HAART use and prevalence of contraceptive use.

However, CD4 counts after being on ART influenced use of FP among HIV positive clients from both private and public facilities. Among the public facilities, use of FP was higher among those whose CD4 counts were 500 and above as compared to those with CD4 counts less than 200 (94.4% versus 64.5%). The relationship among private facilities was however different. Contraceptive use was higher among healthier women with CD4 counts of less than 200 as compared to those with CD4 counts of 500 and above (20% versus 0%). In similar vein, the study of contraceptive use and associated factors among HIV positive women in Zambia reported a significant association between CD4 counts and contraceptive prevalence. Their relationship was however similar to that observed among private facilities whereby contraceptive use was higher among healthier women with CD4+ cell counts of 250–350 cells/uL (AOR: 1.18; 95% CI: 1.05–1.33) or ≥ 351

cells/uL (AOR: 1.23; 95% CI: 1.10–1.38) than among those with low CD4+ cell counts (Muyindike et al, 2012).

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CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions of the study based on the critical findings and make recommendations for policy and further studies.

6.1 Conclusions

6.1.1 The contraceptive prevalence rate among HIV-positive women in the Kumasi metropolis

It can be concluded from this study that contraceptive prevalence was low among HIV positive women in the Kumasi metropolis although awareness of contraceptives was very high. Only 32% of HIV positive women studied were using contraceptives. Use of family planning services was significantly higher among HIV positive clients who assessed healthcare from public facilities as compared to those who visited private facilities. The most cited contraceptive method heard and used by the HIV positive women was the condom (47%) followed by the injectable and pill. None of the clients had heard of or used the foam or jelly and none was using the diaphragm, sterilization, lactational amenorrhoea and periodical abstinence.

6.1.2 The level of unmet need for contraception among HIV positive women on ART and reasons for unmet need

It can further be concluded from the study findings that 38.7% of HIV positive women who did not intend to have children were not using a family planning method to prevent pregnancy. Safety of the method was the most cited reason for not using contraceptives. Other reasons included the effectiveness of the method as well as cost of contraceptives.

6.1.3 Factors influence contraceptive usage among HIV positive clients in public and private facilities

Findings from this study show the influence of socio-demographic, socio-cultural and clinical factors on utilization of contraceptives among HIV positive women. Use of contraceptives among HIV positive women from public facilities was influenced by age, marital status and religion whereas usage among clients from private facilities was influenced by age and educational level.

With respect to social and family factors, dependence on partner influence use of FP among those who assessed healthcare from public facilities whereas usage among HIV positive women who assessed healthcare from private facilities from private facilities was influenced by having children and length of relationship. Relationship with current sexual partner and knowledge of and partners' HIV status influence usage of contraceptives among clients from both private and public facilities. Among the clinical factors considered in this study, usage of contraceptives was influenced by CD4 counts after being on ART influenced use of FP among HIV positive clients from both private and public facilities.

6.2 Recommendations

Based on the outcome of the study, the following recommendations are provided to improve the current level of contraceptive usage and help minimize unmet needs among HIV positive clients.

Ministry of Health/Ghana Health Service/District Health Directorate

- Educational interventions on contraceptive usage should be incorporated into the general healthcare and support programmes at the ART centres.
 - The issue of fear of safety of the method, which can lead to unmet need and contraceptive discontinuation, is better addressed during counselling.
- Contraceptive counselling services at the facility level should be strengthened.

Health facility and community level

- To adequately address reproductive issues concerning women on ART health workers at the HIV clinics require training and need to intensify counselling and education on contraceptive use. The focus of the training should be on appropriate contraception for women on ART as well as how to integrate ART and provision of contraception.
- Information, education and communication (IEC) programs should be intensified in order to enhance the commitment and motivation of users. By education, HIV positive women will be cognizant of their rights especially in fertility preference, and ultimately offer them a greater decision making power within family and also the society as a whole.

Further research

- Further research should be conducted using qualitative methodologies to understand why HIV positive women don't use or discontinue the use of contraceptives and whether efforts to provide counseling under the new programs have improved contraceptive continuation rates.

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APPENDIX 1 CONSENT FORM

Statement of person obtaining informed consent:

I have fully explained this research to _____ and have given sufficient information about the study, including that on procedures, risks and benefits, to enable the prospective participant make an informed decision to or not to participate. DATE: _____ NAME: _____ **Statement**

of person giving consent:

I have read the information on this study/research or have had it translated into a language I understand. I have also talked it over with the interviewer to my satisfaction.

I understand that my participation is voluntary (not compulsory).

I know enough about the purpose, methods, risks and benefits of the research study to decide that I want to take part in it.

I understand that I may freely stop being part of this study at any time without having to explain myself.

I have received a copy of this information leaflet and consent form to keep for myself.

NAME: _____

DATE: _____ SIGNATURE/THUMB PRINT: _____

Statement of person witnessing consent (Process for Non-Literate Participants):

I _____ (Name of Witness) certify that information given to

_____ (Name of Participant), in the local language, is a true reflection of what I have read from the study Participant Information Leaflet, attached.

WITNESS' SIGNATURE (maintain if participant is non-literate): _____

APPENDIX 2

QUESTIONNAIRE

PREDICTORS OF CONTRACEPTIVE UTILIZATION AMONG HIV POSITIVE WOMEN IN KUMASI METROPOLIS GHANA

Introduction

Good morning/afternoon. I am a student at the University of Kwame Nkrumah University of Science and Technology, Kumasi. I will be conducting several meetings with people like you in this facility to find out your views and ideas concerning contraceptive use". Be assured that your responses will not in any way be linked to your identity. You are kindly requested to answer the questions below by indicating a tick or writing the appropriate answer when needed.

THANK YOU

QUESTIONNAIRE ID:

TYPE OF FACILITY:

Public

Private

Quasi Government

SECTION I SOCIO-DEMOGRAPHIC CHARACTERISTICS

Age of respondent? [__ __] years

Marital status

i. Single ii. Married iii. Separated iv. Divorced v.

Widowed vi. Cohabitation

Education level

i. Primary ii. J. S. S iii. Secondary/Tech./Voc./ A-

level/O- level iii. Tertiary iv. No formal education

Religion

i. Christian ii. Muslim iii. Traditional iv Others (specify).....

What is your main occupation?

i. Artisan (carpenter, mason, plumber, driver, etc.) ii. Farmer

iii. Civil/ Public servant iv. Trader/ businessman

How much do you earn per day/week? GHS.....

SECTION II: REPRODUCTIVE HEALTH AND SEXUAL ACTIVITY HISTORY

Do you have children?

i. Yes ii. No

If **YES** go to Q. 10

If **NO**, do you intend to have children?

i. Yes ii. No

9. How many children do you intend to have? [__]

10. How many children do you have? [__]

11. How many more do you want to have? [__]

12. During the last month, how often have you engaged in sexual activity with your partner?

i. Once a month ii. Once a week iii. Twice a week

iv. Once a day

13. During the last month, how often have you had sexual desires involving a partner?

- i. Once a month ii. Once a week iii. Twice a week
 iv. Once a day

14. How important is it for you to fulfil your sexual desire through an activity with your partner?

- i. Very important ii. Important iii. Less important 15.

Have you had any sexually transmitted infections in the last six months?

- i. Yes ii. No

16. Has your partner had any sexually transmitted infections in the last six months?

- i. Yes ii. No

17. Did you seek medical treatment from a health facility?

- i. Yes ii. No

SECTION III: FAMILY AND SOCIAL FACTORS

18. How many sexual partners do you have? []

19. What is the relationship with your current sexual partner?

- i. Husband ii. Consensual partner iii. Boyfriend/other

20. How long have you been in this relationship?

- i. 0-4year ii. 5-9years iii. >10years

21. Does your sexual partner have other relationships in the past twelve month?

- i. Yes ii. No iii. Don't know

22. Do you depend on your partner for any form of financial support or upkeep?

i. Yes ii. No

23. Are you using any form of family planning method?

i. Yes ii. No

24. If **YES**, what family planning method are you using?

Pills

Injectables (Depo-Provera)

Intrauterine Device (IUD)

Implant (Norplant)

Condom

Diaphragm

Foam/Jelly

Sterilization

Lactational Amenorrhea Method (LAM)

Emergency contraception

Withdrawal

Periodical Abstinence

Others (specify).....

25. Does your partner know about it?

i. Yes ii. No

26. Does he know the method you are using?

i. Yes ii. No

27. Do you discuss family planning with your sexual partner?

i. Yes ii. No

28. Does your sexual partner approve the use of family planning methods?

i. Approves ii. Disapproves

29. Have you disclosed your HIV status to your sexual partner or family?

i.

Yes ii. No

30. If **NO**, why?

.....

.....

31. If **YES**, do you receive any form of support from your partner or family?

i.

Yes ii. No

32. Do you know your sexual partners HIV status?

i. Yes ii. No

33. If **YES**, what's his status?

i. Positive ii. Negative iii. Don't know

34. Do you use a condom with your partner?

i. Yes ii. No

35. If **NO**, why?

.....

.....

SECTION IV: CONTRACEPTIVE KNOWLEDGE AND PRACTICES

36. Have you ever heard of any contraceptive method?

i. Yes ii. No

37. If **YES**, which kind of contraceptive method have you ever heard of? You can answer more than one.

- Pills
- Injectable (Depo-Provera)
- Intrauterine Device (IUD)
- Implant (Norplant)
- Condom
- Diaphragm
- Foam/Jelly
- Sterilization
- Lactational Amenorrhea Method (LAM)
- Emergency contraception
- Withdrawal
- Periodical Abstinence
- Others (specify).....

38. How did you get to know about the family planning choice(s)?

- Health education by health care workers
- Radio
- TV
- Newspaper (Daily graphic, Times, etc)
- Books
- Friends/Peers

39. Do you plan to have children?

i. Yes ii. No

40. If **NO**, are you **currently** using any form of family planning method to prevent pregnancy?

i. Yes ii. No

41. If **NO**, why are you not using any?

.....

42. What is the reason for your current family planning choice?

Safe

Effective (works well)

Low side effect profile

Only method known to me

Only method available

Health service provider chose t for me

Affordable

Convenient to use

Others (specify).....

43. Why are you currently using a family planning method?

To prevent HIV transmission to partner

To limit number of children

Low income

To postpone childbearing

To space childbirth

Cost of taking care of a baby

Partner does not want to have a child

Other (specify).....

44. Where do you obtain your family planning service?

Government Hospital

Private Hospital

Maternity Homes

Pharmacy/Chemical Shops

Others (specify).....

45. Do you have or ever experience side effects with your method of contraceptive? i. Yes

ii. No

46. If **YES**, please indicate;

- Menstrual changes
- Weight gain or loss
- Headache
- Mood changes
- Acne
- Dizziness
- Changes in sex drive
- Nausea and vomiting
- Breast tenderness

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47. Do you attribute these experiences to the contraceptive method?

- i. Yes ii. No

SECTION V: SERVICE QUALITY

48. What is your assessment of the family planning service provider's attitude towards you?

- i. Friendly ii. Unfriendly

49. Were you ever informed by healthcare provider about side effects the family planning method?

- i. Yes ii. No

50. Were you informed about how to use the method effectively?

- i. Yes ii. No

51. Were you assured of confidentiality and given enough privacy?

- i. Yes ii. No

52. Do you always get your preferred method at the facility?

i. Yes ii. No

53. Do health staff provide enough counselling on the methods and expected side effects?

i. Yes ii. No

54. How is/was your general satisfaction of the family planning service provided to you?

i. Bad ii. Average iii. Good

55. What do you think can be done to improve services provided here?

.....
.....
.....

SECTION VI: CLINICAL FACTORS

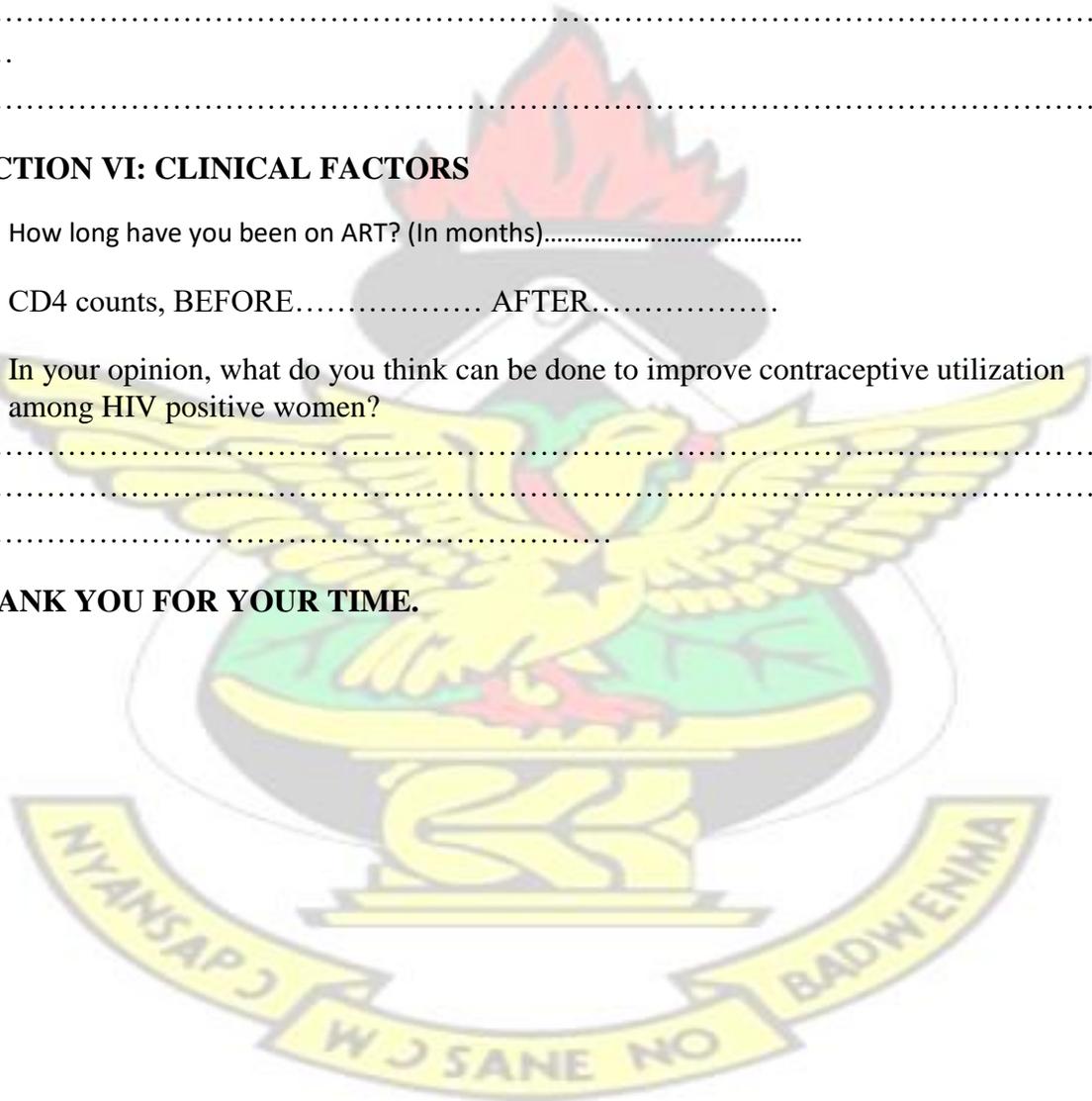
56. How long have you been on ART? (In months).....

57. CD4 counts, BEFORE..... AFTER.....

58. In your opinion, what do you think can be done to improve contraceptive utilization among HIV positive women?

.....
.....
.....

THANK YOU FOR YOUR TIME.



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APPENDIX 3

FOCUS GROUP DISCUSSION (FGD) GUIDE

- Participants per FGD (6/8)
- HIV positive women
- One moderator, one note-taker (*and* use of tape recorder)

Short introductory remarks

- Introduction of researchers and participants
- Thank participants for agreeing to participate, all share a common feature – they participated in the testing and counseling and are here to share their experiences about the service. We want to learn from participants
- Explain purpose of study, purpose of this discussion, reassurance about confidentiality, agree on rules.

Topics for discussion

- i. What do you know about Contraceptives?
- ii. Explore use of contraceptives among participants as well as motivation for using and reasons for not using.
 - What types of contraceptives are preferred and why?
 - Do partners approve to the use of contraceptives?
 - Is contraceptive usage related to intention to prevent pregnancy
- iii. Have you disclosed your status to your partner? If no, why? If yes does he support you in any way?
- iv. What are the perceptions, practices and views in the community that discourages use of contraceptives? (Probe about stigmatization, religious and cultural practices).
- v. What do you think about the counseling and support that you receive at the facility with regard to contraceptive usage? (Probe especially on importance of counseling on use of family planning).
- vi. How will you describe the attitude of staff at the health facility?
- vii. What do you think could be done to improve contraceptive usage among HIV positive women?
- viii. Conclusion, thank participants

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