

**DETERMINANTS OF CONTRACEPTIVE CHOICES AMONG HIV POSITIVE  
WOMEN OF REPRODUCTIVE AGE ATTENDING COMPREHENSIVE CARE  
CENTRE AT KITALE COUNTY REFERRAL HOSPITAL, KENYA.**

BY

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**DECLARATION**

This research thesis is my original work and has not been presented for a degree in any other university.

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## **DEDICATION**

To my dear parents, brothers, sisters and to my dear wife and son for their selfless support and unconditional love throughout my studies.

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**OPERATIONAL DEFINITIONS OF KEY CONCEPTS AND TERMS**

<b>Contraceptives</b>	Agents that are used to prevent the occurrence of pregnancy other than abstinence
<b>Current contraceptive use</b>	Contraceptive method the study respondent was using at the time of interview. Excludes all other method used prior to the interview.
<b>Family planning</b>	The planning of when to have children, and the use of birth control and other techniques to implement such plans.
<b>Maternal mortality</b>	The death of a woman occurring as a result of pregnancy, either due to its direct complications or its effect on other medical condition of the affected woman .
<b>Modern contraceptives method</b>	Contraceptives that are based on scientific knowledge of the process of conception.
<b>Unmet contraceptive need</b>	Unmet contraceptive need is the proportion of fecund women who wish to space their next birth or to limit childbearing altogether but are not using contraception.

**ABBREVIATIONS AND ACRONYMS**

AIDS	_____	Acquired Immune Deficiency Syndrome
AMPATH	_____	Academic Model Providing Access To Healthcare
ARVs	_____	Antiretroviral drugs
CCC	_____	Comprehensive Care Centre
CPR	_____	Contraceptive Prevalence Rate
FGD	_____	Focused Group Discussion
FP	_____	Family Planning
HIV	_____	Human Immunodeficiency Virus
ICPD	_____	International Conference on Population and Development
IUDs	_____	Intra Uterine Devices
KAIS	_____	Kenya Aids Indicator Survey
KDHS	_____	Kenya Demographic and Health Survey
KNBS	_____	Kenya National Bureau of Statistics
LAPMs	_____	Long Acting and Permanent Methods
MDGs	_____	Millennium Development Goals
PLWHA	_____	People Living With HIV/Aids
PMTCT	_____	Prevention of Mother to Child Transmission
SPSS	_____	Statistical Package for Social Sciences
STIs	_____	Sexually Transmitted Infection
WHO	_____	World Health Organization

## ABSTRACT

Family planning is an important aspect of primary health care. In order to improve the efficacy of available contraceptive methods, it is of importance to identify factors influencing women's choice of contraception. In Kenya, like many other sub-Saharan countries, prevention of unintended pregnancies among HIV positive women as a strategy for PMTCT has been neglected. This has resulted in a large population of HIV positive women who have a substantial degree of unmet need for family planning, estimated at 60% in the 2007 Kenya Aids Indicator Survey. This study focused on exploring the various determinants of contraceptive choices among HIV positive women of reproductive age seeking services at comprehensive care centre, Kitale County Referral hospital, Trans Nzoia County. The specific objectives for this study were to determine the knowledge levels, to determine the types of modern contraception used and to assess the factors that influence contraceptive choices among HIV positive women of reproductive age attending comprehensive care centre at Kitale County Referral Hospital. This was a cross-sectional descriptive study of 357 randomly selected HIV positive women where both quantitative and qualitative information was collected. The research instruments used were a questionnaire, key informant interview guide and a focus group discussion guide. The data was analyzed using Statistical Package for Social Sciences (SPSS V.20). Statistical techniques including Chi square, and logistic regression were used in the analysis.  $P < 0.05$  was considered significant. The findings showed that more than half of HIV positive women 182 (52.1%) were using hormonal modern contraceptives. Controlling for occupation, age, religion, access to contraceptives and facing challenges were significant determinants of contraceptive choice ( $p < 0.05$ ). Those below 30 years were less likely to choose non-hormonal contraceptives compared to those 30 years and above (OR; 95%CI: 0.341; 0.195-0.598). Those affiliated with catholic religion were 2 times more likely to choose non hormonal contraceptives compared to Protestants (OR; 95%CI: 2.226; 1.192-4.158). Those accessing contraceptive at the CCC were 11 times more likely to choose non-hormonal contraceptives compare to those accessing from other places (OR; 95%CI: 11.265; 2.914-43.551). Those experiencing challenges in accessing contraceptives were 6 times more likely to choose non-hormonal contraceptives compared to those not (OR; 95%CI: 6.246; 1.410-27.673). In conclusion, choice of contraceptive was strongly related to age, religion, access and challenges. There is need for the Governmental and nongovernmental organizations, health facilities and other stakeholders to ensure availability, accessibility and sustained advocacy for use of appropriate contraceptive methods. This will guarantee contraceptive commodity security and sustained demand for contraception among HIV positive women of reproductive age. There is also need for researchers to investigate husbands' perception and acceptance towards contraceptive use by their partners.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background information

From a reproductive and rights-based perspective, all women should have access to methods that allow them to avoid unintended pregnancies (ICPD, 1994). Family planning is regarded as one of the most cost-effective ways to improve maternal and child health, save lives, and reduce poverty. Evidence demonstrates that use of contraceptive methods has a potential to reduce maternal deaths by at least 30 percent and the deaths of newborn babies by 10 percent and 50 percent of neonatal deaths (Ahmed *et al.*, 2012). Family planning (FP) is not only a key intervention for improving health among the HIV infected women; it is also a key strategy for the achievement of national and international development goals, including the Millennium Development Goals (MDGs) like the MDG on reducing Maternal Mortality, reducing child mortality, and reducing HIV/AIDS which has been known to increase both maternal and child mortality in many developing countries (WHO, 2010). The International Conference on Population and Development (ICPD) in 1994 affirmed the importance of providing family planning within a rights-based framework and as part of a comprehensive set of services to meet individual reproductive health needs that would also address broader development concerns (Westoff and Cross, 2006).

Despite the established value of contraception for reducing rates of pediatric HIV and keeping mothers alive and healthy, efforts to address the family planning needs and rights of women living with HIV need to be strengthened. Globally, there are 222 million women with unmet need for family planning services (Gribble, 2012). Small-scale

surveys indicate that the rate of unintended pregnancy among women living with HIV ranges from 53 percent to 84 percent in some African countries (Wanyenze *et al.*, 2011). Current levels of contraceptive use in sub-Saharan Africa prevent 173,000 infants from being born with HIV annually, even though contraception is not widely available in the region (Reynolds *et al.*, 2005). A new analysis of Demographic and Health Survey data found that about 14 percent of women living with HIV in six African countries have an unmet need for family planning, even though they are in regular contact with the health system for their HIV care (Mahy *et al.*, 2011). In Kenya one in four (26%) women continue to have an unmet need for contraception (KDHS 2008/09). Among an urban Nairobi population of HIV positive women, Mutiso *et al.*, 2008 noted that though 85 percent did not desire a pregnancy in the next two years, only 44.2 percent were using a contraceptive method. Data from the records department at AMPATH, Kitale show that the cumulative number of women aged 15-49 years enrolled in HIV care at the facility was 6057 by the end of September 2013. Among them were 363 postnatal women and 240 antenatal women all of whom were on follow through the PMTCT programme. The cumulative number of exposed children born to HIV positive mothers was 2020.

Use of contraception in the prevention of unintended pregnancies among the HIV infected mothers is the second among the four prongs of prevention of mother to child transmission of HIV. In their book, *Family Planning and HIV*, Wilcher *et al.*, 2009, stated that preventing pregnancies among HIV positive women who do not wish to become pregnant reduces HIV positive births and the number of children needing HIV treatment, care and support. Three times as many infants are spared HIV infection by current

contraceptive use compared to providing antiretroviral treatment to mothers during pregnancy, birth and breastfeeding. HIV infected women therefore, have the right to decide freely and responsibly on the number and spacing of their children and have access to information, education and means to enable them to exercise these rights.

Despite availability of reversible contraceptive methods at no cost from the government facilities, the contraceptive prevalence rate remains relatively low at 46 percent compared to the contraceptive prevalence rate of other developing countries globally (KDHS 2008/09). According to Ng'ure *et al.*, 2009, there is still low rates of contraceptive use among HIV positive women in Kenya. The majority, 60 percent of HIV positive women interviewed in the Kenya Aids Indicator Survey of 2007 had an unmet need for family planning. Coupled with the country's high unmet need for family planning among the HIV infected women, Trans Nzoia reported a high HIV prevalence among the ante natal mothers according to the Kenya Aids Indicator Survey of 2010.

Most methods of contraception and in particular the permanent and long acting methods can be appropriate choices for HIV positive women. However this is poorly understood among HIV positive women and this has led to indirect and direct influence on contraceptive use and choices. Other factors that influence contraceptive choices among HIV infected women that were explored in this study include accessibility of the methods at the service point, provider factors, socio-economic issues, demographic factors as well as knowledge levels and their health status.



## 1.2 STATEMENT OF THE PROBLEM

As a core prong and strategy for PMCT, prevention of unintended pregnancy among HIV positive women has been neglected. Many HIV-infected women are sexually active and increase or resume sexual activity as their health improves whilst on antiretroviral therapy (ART). The prevention of unintended pregnancies among HIV positive women is a critical step towards reducing mother to child transmission, and is a core component of international standards for comprehensive approach to prevention of mother to child transmission of HIV (PMTCT). Women who want to avoid unintended pregnancies can do this by using modern contraceptive methods safely and effectively with variation in method preference (Baylies, 2000).

Globally more than 2 million HIV-positive women fall pregnant each year, with up to 600,000 dying of pregnancy-related complications annually, mostly in resource-constrained settings (Mcintyre, 2003). Further, worldwide, over 1700 infants become infected with HIV daily; 90 percent through mother to child transmission (WHO: PMTCT Strategic Vision 2010-2015). Studies from across Africa show that many pregnancies are unplanned, and that maternal deaths can be avoided if correct and consistent contraceptive use is promoted amongst women of childbearing age living with HIV and AIDS. In Kitale data from AMPATH revealed that about 6057 women of reproductive age were seeking for services at CCC all of whom had particular needs for modern contraceptive methods in order to avoid unwanted pregnancies, to protect their own health and to eliminate the risk of transmitting HIV to their newborns.

Despite the existing evidence and recommendation for specific methods for HIV positive women, use of long lasting and permanent methods (LAMPS), is still poorly understood among the HIV positive women of reproductive age. The purpose of this study was therefore to assess the factors which influence the choice of contraceptive methods used by HIV positive women of reproductive age attending contraceptives centre at Kitale County Referral Hospital.

### **1.3 Research questions**

- a) What is the level of knowledge on modern contraception among HIV infected women of reproductive age 15-49 years attending CCC at Kitale County Referral Hospital
- b) What are the modern types of contraceptives used by HIV infected women of reproductive age 15-49 years attending CCC at Kitale County Referral Hospital?
- c) What are the factors influencing contraceptive choices among the HIV infected women of reproductive age 15-49 years attending CCC at Kitale County Referral Hospital?

### **1.4 Study Objectives**

#### **1.4.1 Broad objective**

To assess the factors that determine contraceptive choices among HIV infected women of reproductive age attending the comprehensive care clinic at Kitale County Referral Hospital.

### **1.4.2 Specific objectives**

1. To determine the knowledge levels on modern contraception among HIV infected women of reproductive age attending the comprehensive care centre at Kitale County Referral Hospital.
2. To determine the types of modern contraceptives used by HIV infected women of reproductive age attending the comprehensive care centre at Kitale County Referral Hospital.
3. To assess the factors that influence contraceptive choices among HIV positive women of reproductive age attending the comprehensive care centre at Kitale County Referral Hospital.

### **1.5 Null hypothesis**

1. Demographic and socio-economic factors have no significant influence on the contraceptive choices among HIV positive women of reproductive age attending CCC at Kitale County Referral Hospital.
2. There is no significant association between knowledge of family planning and the contraceptive choices among HIV positive women of reproductive age attending CCC at Kitale County Referral Hospital.

### **1.6 Justification**

The high rates of unintended pregnancies among the HIV positive women as revealed by literature prompted this study. Furthermore there is scanty information concerning contraceptive choices among the HIV infected women within reproductive age in Trans Nzoia County. It is anticipated that this research will update existing knowledge, inform

policy makers and programmers to support safer and healthier reproductive options among HIV positive women in the study area.

In an era when approximately 40 million adults and children are living with HIV/AIDS and women of childbearing age account for nearly half of the infected population, family planning has a critical role to play in curbing the HIV pandemic. Reducing unintended pregnancies through effective contraceptive choices among HIV-positive women decreases not only the number of HIV-infected infants but also the number of children orphaned when their parents die of AIDS-related illnesses. Researchers have estimated that meeting the unmet need for family planning in the 20 countries with the highest burden of HIV, including Kenya, would result in six million fewer unintended births and 61,000 fewer children with HIV by the year 2015 alone (Stover and Mahy, 2011). It also decreases HIV-infected women's vulnerability to morbidity and mortality related to pregnancy and lactation, as well as potential in-utero harm during pregnancy from taking antiretroviral medications.

Ensuring access to FP in PMTCT services can save and improve the lives of thousands of women and children. The potential impact of contraception on efforts to prevent pediatric HIV is also well established. Thus, given the importance of contraceptive use in preventing unintended pregnancy and perinatal transmission of HIV, it is worth to identify the factors associated with contraceptive method preference among HIV infected women aged 15-49 years seeking for CCC services at Kitale County Referral Hospital.

## 1.7 Conceptual framework

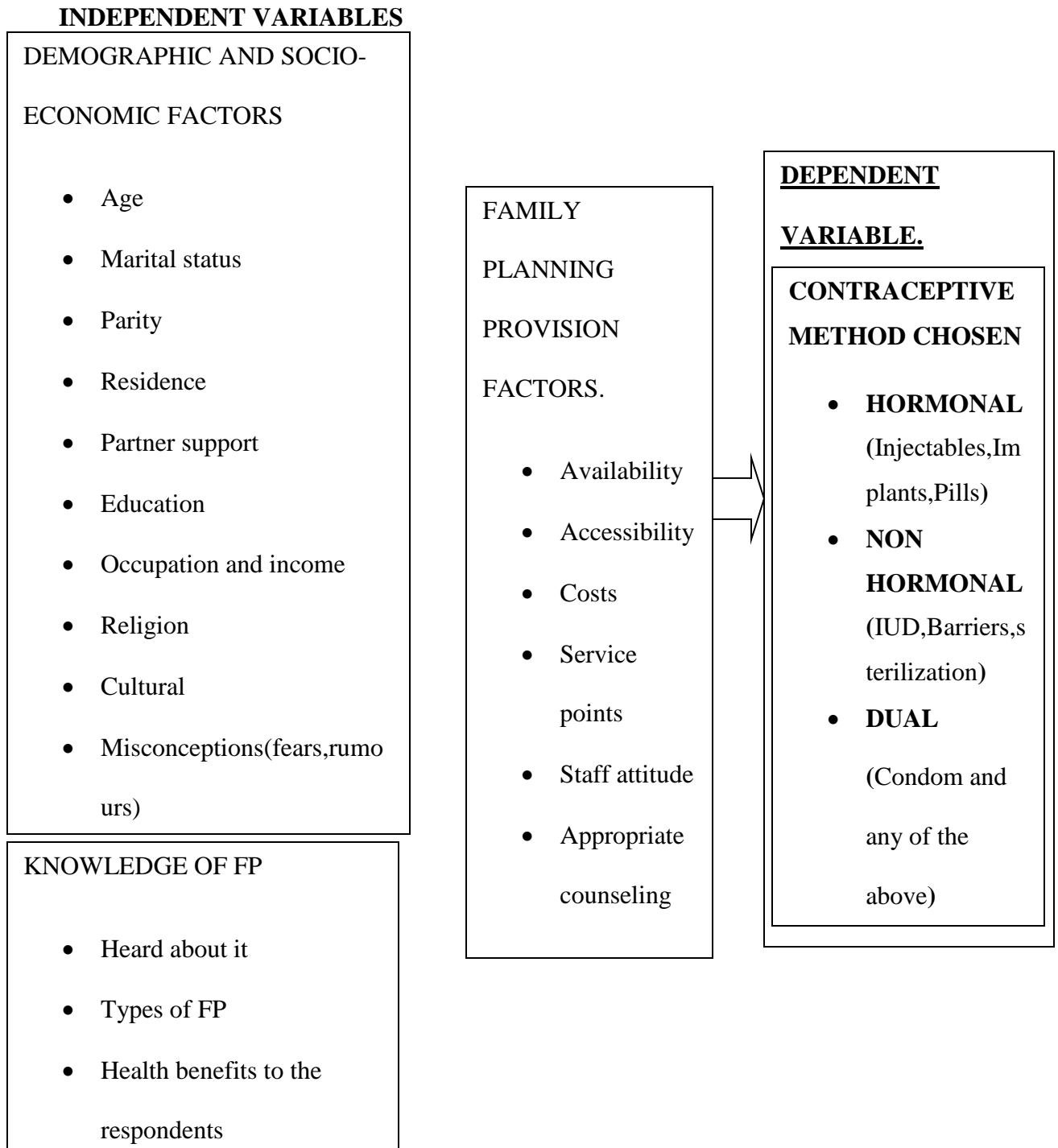
Contraceptive choice is influenced by accessibility and availability based on the extent to which staff attitude, education and campaign programmes, cost and service points distribution are planned to promote the service. A poor accessibility could therefore lead to limited contraceptive choices and therefore low use whereas the contrary would lead to an increase in options for choice.

Poor social perspective on family planning due to religion, education, moral or cultural factors, misconception such as fears and rumours may limit the acceptability of contraceptive and therefore limit number of women making choices and using the available contraceptives. In addition, economic status of users could empower their decision-making and further suppress negative social perspective of contraceptives hence, increase its use and appropriate choice of contraception. However, unemployment which leads to economic dependency may affect one's decision making on birth control and therefore influence use or non-use of one's preferred choice of contraceptive method.

Finally, knowledge and use of contraceptive information, has a direct and indirect influence on contraceptive choices. Directly, a more enlightened person on contraceptive may use an appropriate own choice but the less enlightened, may doubt its potency and its benefit and therefore may not find it attractive to use. In some instances society may not accept contraceptives due to cultural, religious and economic reasons, coupled with poor provider attitude and cost of service. The more enlightened on contraceptive effects could suppress these hindrances and still pursue their choices and use, whereas in the

non-enlightened, social and access issues will make them decide not to use any of their contraceptive choices.

**Figure 1: Conceptual framework: Determinants of contraceptive choices**



Source: Adapted and modified from Cleland et al., 2006

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

This chapter presents a review of the literature on the determinants of contraceptive choices among HIV positive women of reproductive age. Any deliberate practice undertaken to reduce the risk of conception is considered as contraception. In general, the same contraceptive options are available to couples irrespective of their HIV status.

According to WHO's Medical Eligibility Criteria for Contraceptive use, most contraceptive methods are considered to be safe and effective for HIV positive women, both with asymptomatic HIV and AIDS. (WHO, 2004.). Generally, long-acting, reversible methods and sterilization are the most effective; they provide more than 99 percent protection against pregnancy over a year of use, with very low pregnancy rates among typical users that approach perfect-use rates. Once initiated, these methods are relatively user independent. Shorter-acting hormonal contraceptives are generally in the next tier of effectiveness. Included are such methods as pills, patches, and vaginal rings. These methods have high efficacy, but potential problems with compliance (missed doses, unreliable supply) result in higher real-world pregnancy rates. For example, the typical pregnancy rate for the combined oral contraceptive pill is 8% in the first year of use. Barrier methods are somewhat less effective (pregnancy rates of 15%–32%), followed by contraception that relies on timed intercourse, such as withdrawal or fertility-awareness methods (Trussell, 2004).

Contraceptive choices among the HIV infected women is important in that it does not only liberate the women from social and health consequences of unwanted pregnancies,



but also prevent the spread of HIV/AIDS and other sexually transmitted infections (STIs) as well as improve the health of these women. According to *Studies in Family Planning Journal* 2005, PMTCT stakeholders widely endorsed preventing unintended pregnancy among HIV-positive women as a cornerstone of PMTCT services. The public health approach recommends that HIV-positive women avoid future pregnancies out of concern for the health of the woman and the wellbeing of her already-born infant and other children.

According to the health belief model developed by Becker (1974), individual perceptions such as perceived seriousness of pregnancy, perceived benefits and perceived barriers are more likely to affect use of contraception which can prevent unplanned pregnancy.

Provider's negative attitudes can also prevent use of services. Both demographic and socio-economic determinants of use of reproductive health services are mediated by cultural influences on health care seeking behavior that shape the way an individual perceives her own health and available health services.

## **2.2 Contraceptive use**

There is wide variation in contraception prevalence worldwide ranging from 8 percent of women aged 15–49 years in western Africa up to 78 percent in northern Europe. Female sterilization 32 percent, intrauterine devices 22 percent, and the oral contraceptive pill 14 percent account for more than two thirds of all contraceptive practice worldwide. In less developed countries 70 percent of contraception users rely on female sterilization and intrauterine devices in part because they are advocated by healthcare services as a result of cost effectiveness in terms of pregnancy prevention and service provision (Mitchell and Stephens, 2004). Contraception use and compliance is related to the range of methods

available, patient choice, prevalent health and religious beliefs, perceptions of method effectiveness, and side effects.

Although many effective contraceptive options are available in Kenya, unintended and unwanted pregnancies still occur. The 2008 Kenya Demographic and Health Survey (KDHS) report shows that Kenya is experiencing positive national trends in the areas of contraceptive prevalence rates. However, recent studies report low contraceptive use rates among HIV-positive women in Kenya, despite stated desire for no future fertility. The majority (60 percent) of HIV-positive women interviewed in the Kenya AIDS Indicator Survey 2007 had an unmet need for family planning.

Actual use of contraception among women may be considered a function of interest in delaying, spacing or limiting child bearing within a population and the accessibility of contraceptive services to that population. Effective access may in turn be defined in terms of knowledge of source of family planning information and other services, and the extent to which other constraints that limit utilization of those services exist. Such constraints may include the cost of contraception, social barriers and quality of services available (Curtis and Neitzel, 1996). Cost has been shown to be a barrier in service use (Bloom *et al.*, 1999, Griffiths & Stephenson, 2001) and it also influences the choice of source from which care is sought.

Broadening the choice of contraceptive methods increases overall contraceptive prevalence (Magadi and Curtis, 2003). The provision of a wide range of contraceptive methods increases the opportunity of individual couples to obtain a method that suits

their needs. A study by Ross *et al.*, (2001) of contraceptive method choice in developing countries confirmed that prevalence is highest in countries where access to a wide range of methods is uniformly high. However, there are still some countries in sub-Saharan Africa which offer a limited choice of contraceptive methods and couples cannot easily choose the method that best suits their reproductive needs (Ross *et al.*, 2001).

According to the Kenya Demographic and Health Survey 2008/9, health concerns 15 percent, and fear of side effects 16 percent were the main reasons why women reported not intending to use contraception in future. Religious prohibition 9 percent, husband/partner opposition 6 percent, distance from source 0.8 percent and cost 0.4 percent posed less of a reported barrier to use of contraception. The fear of side effects such as pain and effect on libido, or health concerns such as infertility and birth defects are brought about by negative and inaccurate beliefs otherwise referred to as myths and misconceptions. In some cases, such beliefs were based on personal experiences or reports from relatives or community members, which were fabricated or exaggerated to discourage use of contraception.

Studies have reported that women not desiring any more children are more likely to report using contraception compared to women desiring more children. High level of education, being married, current use of ART has also been positively associated with use of contraception (Am J Public Health. 2009).

A study in Uganda found that integration of family planning into HIV and AIDS services appears to offer a lot of benefits. The benefits reported included an increase in family planning uptake by HIV positive women and reduction of stigma among HIV clients as opposed to free standing contraceptive services (African J Reprod Health. 2010). It also led to improved discussion of sex and fertility desires among between HIV positive women and health care workers who already had an ongoing relationship with clients unlike unfamiliar health facilities where women might fear discrimination (African J Reprod Health. 2010). However integration may also be associated with several challenges like problems of space for storage of additional supplies associated with integration, increased workload which may affect quality of services and stock out of supplies (African J Reprod Health. 2010).

### **2.3. Knowledge of contraception**

Correct use of most user dependent methods requires a basic knowledge of reproduction and literacy skills to follow written instructions as well (Mitchell and Stephens, 2004). Correct knowledge should include how the various methods work, family planning method's safety and side effects, and address the issues of misinformation (Family planning guidelines, 2010). Further, a couple's acceptance of modern methods is all too often limited because they do not know how modern methods work or they think methods have an adverse influence on their ability to conceive later.

### **2.4. Family Planning provision factors**

It should be noted that concerns about poor provider-client interaction exist, including limited counseling on available FP options and side effects as well as unfriendly language which may be impeding factors in accessing FP. Belmonte *et al.*, (2000), noted that some

unmarried young women find service providers hostile or unhelpful, especially where strong cultural or religious beliefs condemn sexual activity among the unmarried women.

Cost for services including travel costs, lost wages or lost time for non wage carriers, costs for child care and fees for services as well as inadequate essential supplies impacts negatively on contraceptive choices and use by the women.

Further, according to Naomi and Carolyn, 2005, family planning counseling of HIV positive women must be sensitive to their needs and respect their rights, including their rights to make an informed decision about having another child and their desire to involve their male partners. The emphasis will vary depending on the setting, but family planning counseling should ensure that HIV-positive women have the opportunity to make genuinely informed choice about permanent contraception and should help women prepare not only for the benefits but also for the potential risks of introducing condoms to their partners, which may elicit angry or hostile reactions. In many settings though, a large proportion of women do not return for post natal follow-up. Putting more emphasis on family planning counseling for HIV-positive women and ensuring that women make a decision about a contraceptive method in the antenatal period would increase ease in re-establishing contact after delivery.

## **2.5. Attitude towards contraception**

The demand for FP is shaped not only by fertility desires but by the acceptability and availability of contraceptives, as well as by concerns about the effect of contraceptive method on HIV infection. In East Africa where contraceptive prevalence is low, strong

fears persist about the impact of contraceptive method on the women's health regardless of their HIV status (Naomi and Carolyn, 2005). Attitudes regarding further pregnancies for HIV-positive women depend on the extent of community's openness about HIV/AIDS, its fertility norms, and its exposure to PMTCT services.

In an operation research study in Lusaka, condoms were found to be perceived positively by HIV-positive women, not only because they offer protection against re-infection and STIs as well as against unwanted pregnancy, but also because they are seen as safe, cheap, and readily available. Moreover, PMTCT sites promote their use by HIV-positive women. Introduction to condom use is easier when a woman has disclosed her status in that this motivates her to avoid infection or re-infection.

## **CHAPTER THREE: MATERIALS AND METHODS**

### **3.1. Introduction**

This chapter outlines the procedures to be used in the study. The section focus on the research design, description of the study area, the target population, data sources, sample design and sampling procedure, sample size calculation, data management and analysis as well as ethical considerations and the pilot study that was carried out to test the feasibility of the study and the reliability and validity of the study tools.

### **3.2. Study design**

A cross sectional descriptive study design was used whereby information concerning determinants of contraceptive choices among HIV positive women of childbearing age of age 15-49 years seeking services at Kitale CCC was collected at one point in time .This focused on the factors that prevent or promote the use of specific family planning methods by the women.

### **3.3. Study variables**

#### **3.3.1. Independent variables**

These were factors which literature review revealed that had significance on the choice of contraception by the respondents. These were; demographic factors such as age, marital status, parity, residence and partner support. Socioeconomic and school factors such as, level of education and employment status of the women were also checked. Socio - cultural factors studied included religion, culture and misconceptions among the respondents. Family planning provision factors included commodity availability, accessibility, costs, health provider attitude and appropriate counseling to the clients.

### **3.3.2. Dependent variable**

The dependent variable in this study was contraceptive method chosen by the women.

The contraceptive methods were broadly classified as hormonal, on hormonal and dual method of contraception.

### **3.4. Description of the study area**

The study was carried out at comprehensive care centre [AMPATH] within Kitale County Referral hospital which is the main care centre within the larger Trans-Nzoia County. Located in the former Rift Valley Province, Trans Nzoia County borders the Republic of Uganda to the North West, and the following counties; West Pokot to North, Elgeyo Marakwet to the East, Uasin Gishu and Kakamega to the South, and Bungoma to the West and South West. It has a Total Population of 818,757 (KDHS 2008/09); 170,117 Households and covers an area of 2,295.5 Square Kilometre. The Population density is 328 people per Square Kilometre (Kenya Population and Housing Census Report, August 2010) and 5.2% of the population live below the poverty line (Kenya Integrated Household Baseline Survey, 2005/06). Population with primary education was 70.9 percent whereas only 10.9 percent had attained secondary education according to 2008/09 KDHS. According to the Kenya Aids Indicator Survey 2010, HIV positive antenatal care clients' prevalence in Trans Nzoia stood at 5.4 percent as compared to the country prevalence of 5.9 percent. Being a transit town with many farming enterprises, Kitale has experienced a serious influx of foreigners from both the neighbourhoods of Uganda and Southern Sudan as well as from the other Kenyan Counties. Health facilities in the County include 1 County Referral hospitals, 3 sub county hospitals, 7 health centres, 33 dispensaries, 28 medical clinics and 2 nursing homes. Services for people



living with HIV/AIDS have been decentralized to most of the health facilities notably the sub county hospitals within the county. However, currently, Kitale County Referral Hospital is the only facility that has integrated FP services within the centre and has a fully functional FP clinic.

### **3.5. Target population**

The target population was all HIV infected women within the reproductive age bracket of 15-49 years seeking services at Kitale comprehensive care clinic. According to estimates from National Aids Control Council, by the end of 2011, there were about 30094 adults living with HIV in Trans Nzoia. It is estimated that over 10000 of these are females and those aged 15-49 years enrolled for care at CCC according to hospital records stood at 6057 by end of September 2013. This was used as my sampling frame.

### **3.6. Inclusion criteria**

All women of childbearing age 15-49 years who were HIV positive and able to consent to participate in the study were included. The women must have been on a contraceptive method at the time of the study.

### **3.7. Exclusion criteria**

Severely ill clients not able to withstand the interviewing process were excluded from the study. Any sampled patient who declined to answer or participate was also excluded and random sampling continued until the minimum desired sample size was attained.

### **3.8. Sample size calculation**

Sample size was derived at by calculation using Fisher *et al.*, (1998) formulae, as shown below:

$$n = z^2 pq / d^2$$

Where  $n$  is the desired sample size,  $z$  is the standard normal deviation usually set at **1.96** which corresponds to **95%** confidence level,  $p$  is the proportion of the target population which has the problem and  $q$ , is the proportion of the target population without the problem ( $1-p$ ) and  $d$  is the degree of accuracy usually set at **0.05**. According to the Kenya District Population estimates 2010, the number of women aged 15-49 years in Trans Nzoia west district was 92427. Since the proportion of HIV positive women of reproductive age using contraceptives is unknown  $p$  will be taken as 0.5 by convention and  $q$  ( $1-0.5$ ) =0.5, hence

$$: n = (1.96)^2 * (0.5) * (0.5) / (0.05^2) = 384$$

Since the sampling frame (6057) was less than 10,000, the sample size was adjusted using the formula  $n_1 = n / (1 + n/N)$  (Mugenda and Mugenda, 2003)

$$= 384 / (1 + 384/6057)$$

$$= 357$$

All the five health care workers were purposively sampled and interviewed using key informant interview guide in order to gather their expert opinion on the topic.

### **3.9. Sample design and sampling procedure**

Simple random sampling was used. The computer facility (SPSS) was used to randomly pick the required sample size from the sampling frame. If the selected woman did not use contraceptive she was replaced by another one also picked at random and using contraceptive. This continued until the required sample size was achieved. The exercise

was carried out in a period of one month to ensure no woman was interviewed twice since most clients are usually given a return date of at least one month. All the health care workers were purposively sampled to participate in the study. Kitale County Referral Hospital was also conveniently sampled as the study site since it had the largest number of clients in addition to the fact that it has a fully functioning FP clinic within the CCC.

### **3.10. Data sources and data collection procedures**

Mugenda and Mugenda (1999) recommended the use of multiple methods of data collection in order to study all aspects of a phenomenon in which case the merits of one instrument may offset the demerits of the other. Therefore, qualitative data was collected using Focus Group Discussion (FGD) technique. Eight eligible randomly selected representatives of the women were tasked to express their views on determinants of contraceptive choices where the chief investigator was the moderator. The health workers, who were purposively sampled, were also interviewed using a key informant interview guide in order to collect their expert opinion on the topic.

On the other hand, quantitative data was collected over a period of one month using interviewer administered structured questionnaires containing both closed and open ended questions categorized into several thematic areas. Trained research assistants administered the questionnaires to every woman who met the inclusion criteria and gave an informed consent to participate in the interview. The exercise was conducted by the principle investigator and two well trained research assistants who were appropriately supervised in the field to ensure professionalism when collecting the data.

### **3.11. Pilot study**

A pilot study was carried out on 18 (5% of sample size) HIV positive women using modern contraceptives in Endebess sub county hospital, which is one of the sites of AMPATH within Trans Nzoia County. This helped test the feasibility of the study as well as to assess the reliability of the research instrument. The split half technique was employed and Pearson product moment correlation of 0.7 and above indicated the tool is reliable. Validity of the study tools was assessed by submitting the tools to the experts in the field of study (supervisors). Research assistants were trained on data collection tools and procedures in readiness for data collection. The questions in the questionnaire were revised and the final set of questions made based on the results of the pilot study and comments from the experts.

### **3.12. Data management and analysis**

After data collection was complete, the data collection tools were checked for completeness and coded. Data entry was done in a computerized database designed in Epidata V3.1. It was later exported into the Statistical Package for Social Sciences (SPSS V.20) for analysis. Descriptive statistics (frequencies, mean (SD) were used to summarize the data. Chi-Square was used to test for association between categorical independent variable and the outcome variable (contraceptive choice). Binary logistic regression analysis was used to obtain the factors influencing contraceptive choices among HIV positive women aged 15-49 years attending CCC at Kitale district hospital controlling for confounders.  $P < 0.05$  was considered statistically significant. Findings were presented in tables, graphs and charts.

### **3.13. Ethical considerations**

The approval of the research proposal was sought from graduate school of Kenyatta University .Ethical clearance was obtained from Kenyatta University Research and Ethics Committee. Permit to undertake the study was obtained from the National Commission for Science, Technology and Innovation. Permission to carry out the study was also sought from the county administrative authorities, the hospital research and ethics committee as well as from the AMPATH administrative authorities. A written informed consent form was used to seek a written consent from respondents of the study. All the participants were assured of confidentiality and that refusal to participate in the study would not attract any penalty. Confidentiality was ensured by restricting access to data documents to only the primary investigators. Study codes were also used on the questionnaires instead of recording subjects identifying information like names. Security codes to the computerized records were also assigned to protect the data. The documents for consent, approval, clearance and permission for the study are as shown in appendices II, III and IV respectively.

## CHAPTER FOUR: RESULTS

### 4.1. Background information

A total of 347 (97.2%) participants responded to the questionnaire. More than half 222 (64%) were from Trans-Nzoia west sub-county (fig 4.1)

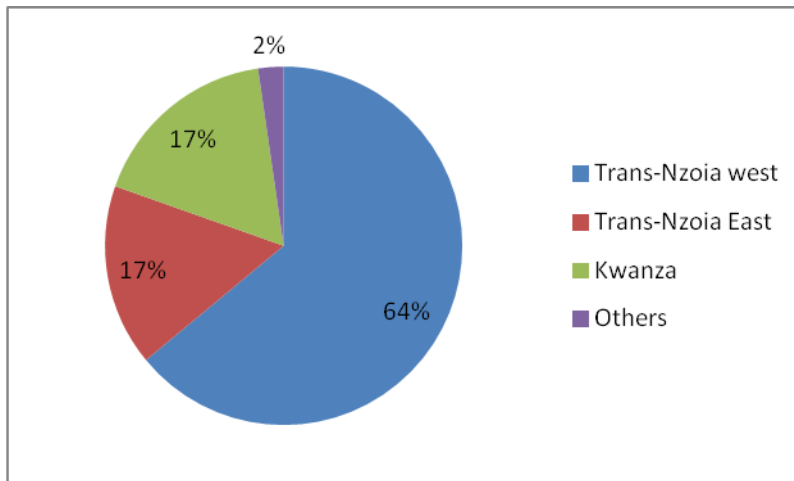


Fig 4.1: Sub-county of residence

### 4.2. Socio-Demographic characteristics

As indicated in table 4.1, 101 (29.1%) were aged between 30-34 years and 201(57.9%) were married. Hundred and forty two (41.6%) had parity of 3-5 and half 174 (50.1%) had attained primary level of education. Hundred and sixty five (48%) were self employed and 175 (50.4%) were residing in rural areas. Almost three quarters 257 (74.1%) were protestants.

**Table 4.1: Socio-demographic characteristics**

<b>Characteristic</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age-group</b>		
15-19	6	1.7
20-24	35	10.1
25-29	70	20.2
30-34	101	29.1
35-39	86	24.8
40-45	42	12.1
46-49	7	2.0
<b>Marital status</b>		
Never married	43	12.4
Married	201	57.9
Divorced/separated	60	17.3
Widowed	43	12.4
<b>Parity</b>		
None	33	9.7
1-2	133	39.0
3-5	142	41.6
>5	33	9.7
<b>Level of education</b>		
None	9	2.6
Primary	174	50.1
Secondary	125	36.0
College	32	9.2
University	7	2.0
<b>Occupation</b>		
Formally employed	38	11.0
Self employed	165	48.0
Unemployed	141	41.0
<b>Residence</b>		
Rural	175	50.4
Urban	172	49.6
<b>Religion</b>		
Catholic	83	23.9
Protestant	257	74.1
Muslim	3	0.9
Others	4	1.2

### 4.3. Knowledge and use of modern contraception

Majority of the respondents 343 (98.8%) (Table 4.2), had heard about contraception of which 208 (60.6%) heard it from the health care provider (fig 4.2).

Table 4.2: Heard about contraception

RESPONSE	FREQUENCY	PERCENTAGE
YES	343	98.8
NO	4	0.2

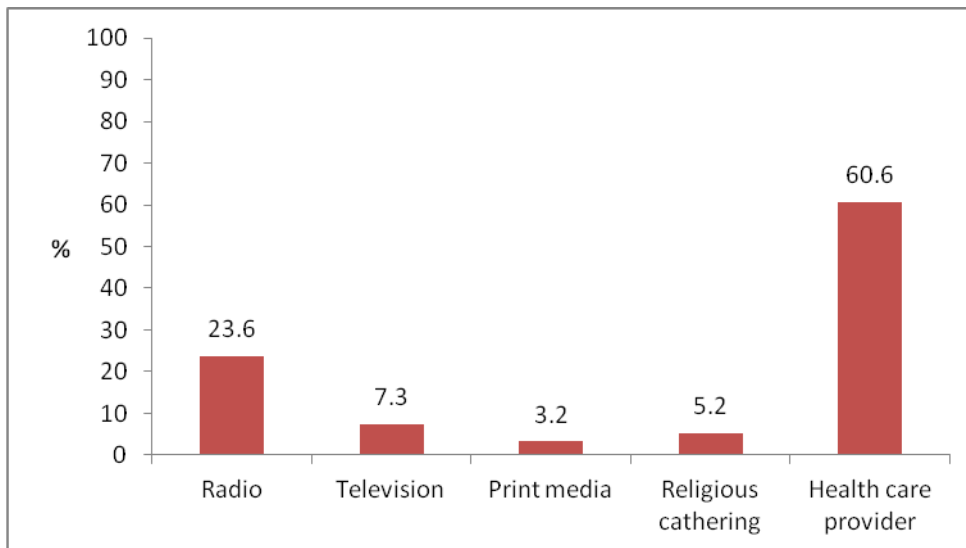


Fig 4.2: Source of information on contraception

Majority of the respondents had heard of pills 295 (86%), injectables/Depo-Provera 302 (88%) and male condom 266 (77.6%) (Fig 4.3)



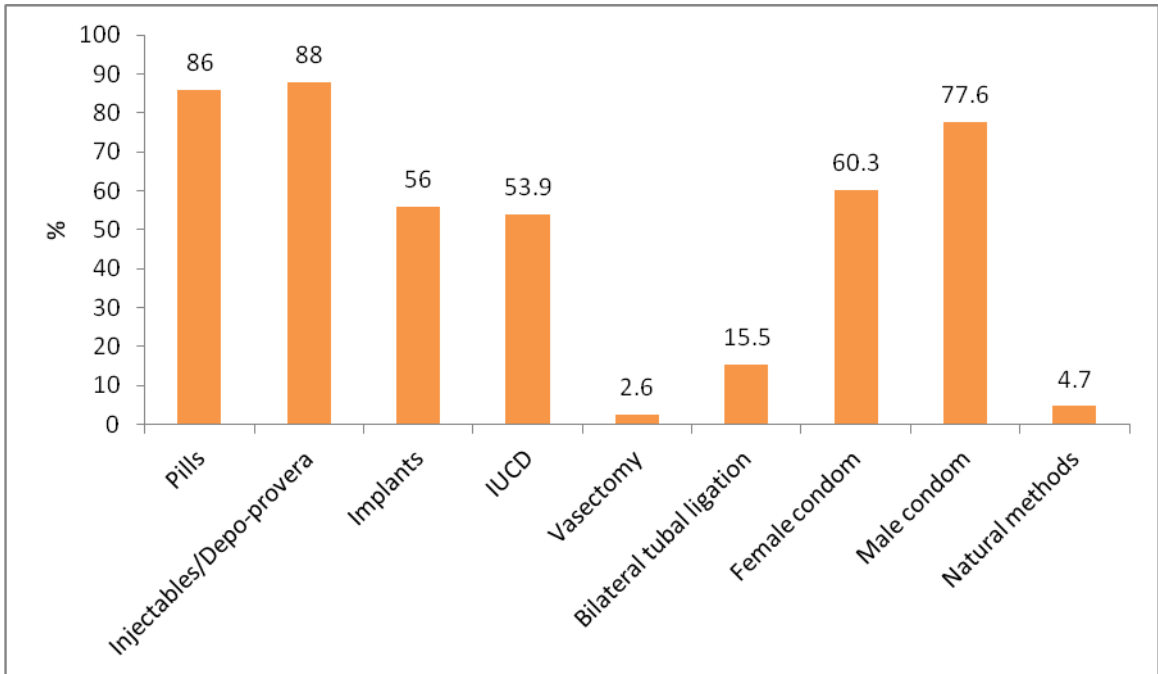


Fig 4.3: Method of contraception heard of by the women

#### 4.4 Types of contraceptive methods in use by the women.

The methods that were mostly used by the women as shown in table 4.3 were hormonal short acting contraceptives (Depo-Provera 133 (38.3%), implants 56 (16.1%) and pills 13 (3.7%)). Male condom was widely used at 31.7% due to health care providers advice. Dual method was only used by about 21 (6%) of the respondents.

Table 4.3 Specific contraceptive method currently in use by the women.

<b>METHOD</b>	<b>FREQUENCY(N)</b>	<b>PERCENTAGE (%)</b>
PILLS	13	3.7
DEPO-PROVERA	133	38.3
IMPLANTS	56	16.1
BTL	4	1.2
IUCD	5	1.4
MALE CONDOMS	110	31.7
FEMALE CONDOMS	5	1.4
<b>DUAL METHOD</b>		
PILLS AND MALE CONDOMS	11	3.2
DEPO-PROVERA AND MALE CONDOMS	1	0.3
IMPLANTS AND MALE CONDOMS	7	2.0
BTL AND MALE CONDOMS	1	0.3
IUCD AND MALE CONDOMS	1	0.3
<b>TOTAL</b>	<b>347</b>	<b>100</b>

#### 4.5 Start of use of a contraceptive

More than half of the mothers 186 (54.4%) started using contraceptives after they learned and accepted their HIV status while 94 (27.5%) soon after delivery of first born (fig 4.4)

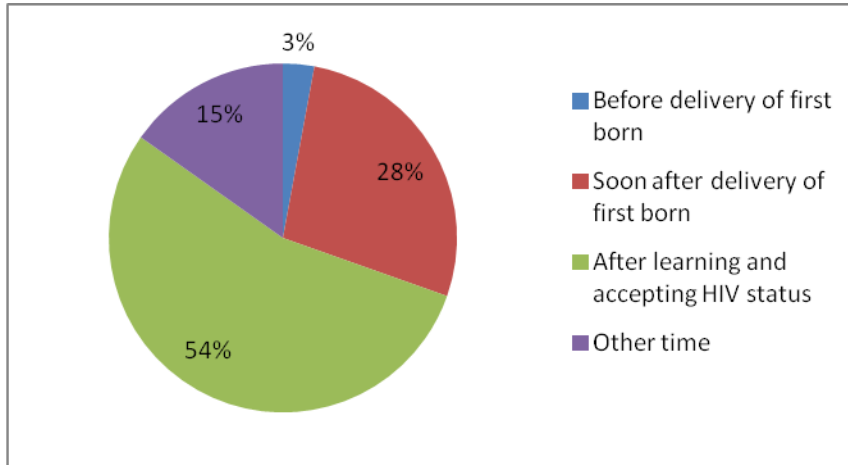


Fig 4.4: Started using contraceptive

#### 4.6 Reason for use of the chosen contraceptive

Results on table 4.4 show that a higher percentage 224 (64.9%) used the method of contraceptive to avoid pregnancy, 35 (10.1%) to prevent spread of HIV/AIDS. Eighty six (25.0%) used it to avoid pregnancy and prevent spread of HIV/AIDS at the same time.

**Table 4.4: Reason for use of the chosen contraceptive**

Reason	Frequency	Percent (%)
To avoid pregnancy	224	64.9
To prevent spread of HIV/AIDS	35	10.1
Avoid pregnancy and spread of HIV/AIDS	86	25.0

#### 4.7 Reason for preferring a contraceptive method.

Hundred and twenty of the respondents (34.6%) preferred the contraceptive method because it was more effective, 90 (25.9%) because of fewer side effects while 87 (25.1%) that because it was easy to use (fig 4.5)

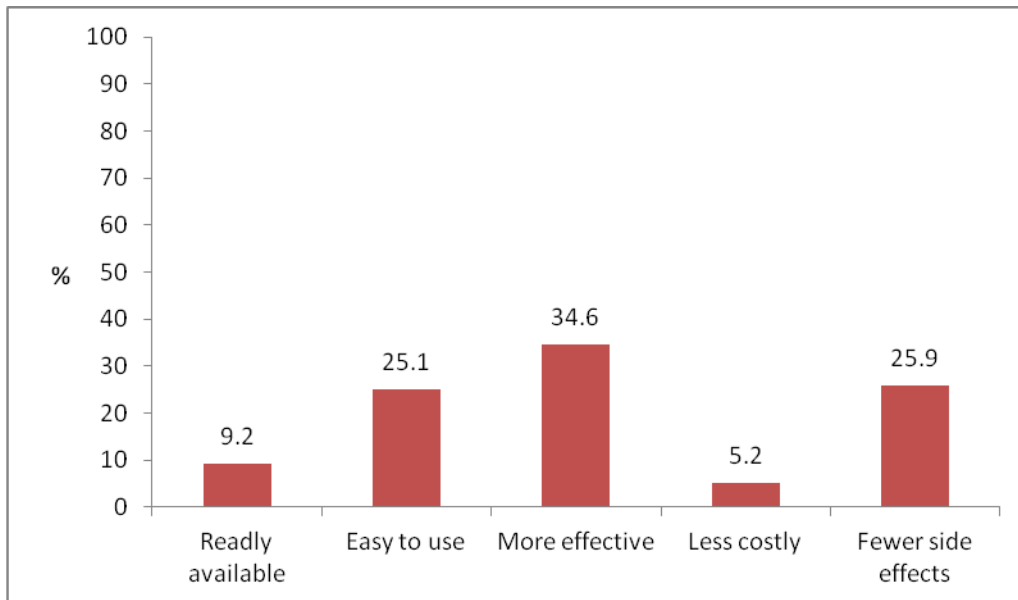


Fig 4.5 Reason for preference of a contraceptive method

Majority of the respondents 303 (87.3%) were not affected in their usual method of contraceptive with the initiation of antiretroviral drugs. Only 44 (12.7%) were affected in that they reported change of their usual method of contraception as well as use of dual method.

#### **4.8 Decision on use of contraception**

For majority of the women 207 (60%), it was their own choice to use a contraceptive while 92 (26.7%) was a joint decision between them and their husband (fig 4.6)

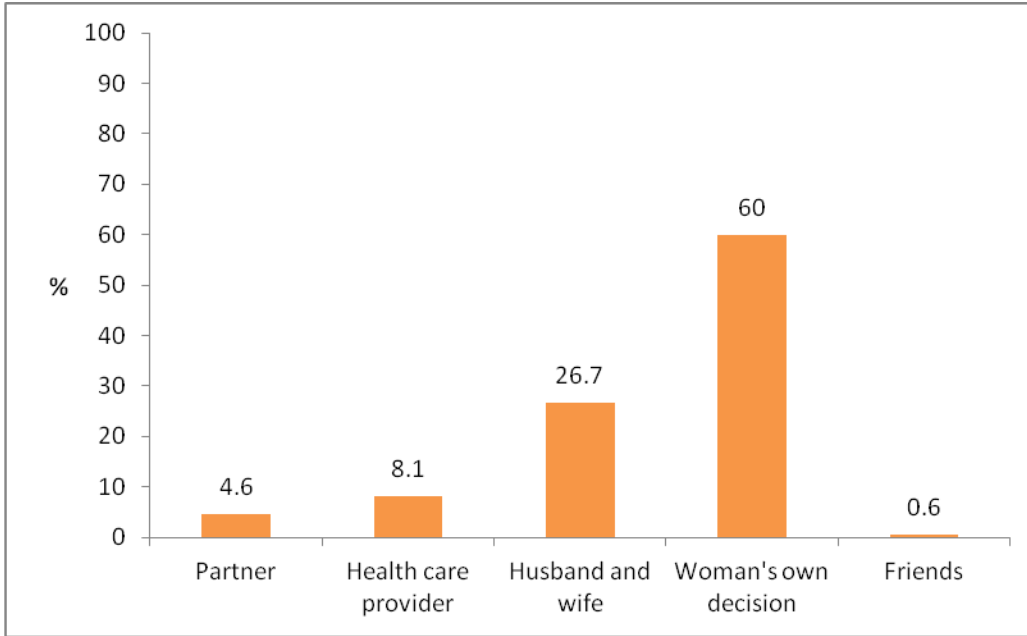


Fig 4.6: Decision on use of contraception

#### 4.9 Availability and access of methods

A Hundred and fifty (43.5%) of the women do access their preferred method of contraception within the CCC while 94 (27.2%) from a private chemist shop (table 4.5)

**Table 4.5 Access to preferred method of contraception**

Place of access	Frequency	Percentage (%)
Within CCC	150	(43.5)
Another section of the hospital	86	(24.9)
Private chemist shop	94	(27.2)
Other place	15	(4.3)

Only 13 (3.8%) of the women do experience the challenge of accessing contraceptive method of their choice. The challenges included the cost and commodity shortages.

#### **4.10. Religious beliefs/Cultural factors**

Only 34 (9.9%) reported that their faith prohibit use of modern contraceptives of which all 34 (100%) reported that it influenced their choice and uptake of contraception.

The culture of 24 (7%) of the women prohibit use of contraception though only 11 (45.8%) report to have been influenced by culture in their choice and uptake.

#### **4.11. Perception/attitude and fear of side effects**

Majority of the women ,311 (90.2%),disagreed that Health care providers are abusive and not willing to assist in the provision and in choosing the appropriate contraceptives.325 (94.2%), disagreed with the statements that there is no need of using contraceptives when one is aware of her HIV status and that use of modern contraception by a HIV positive woman increases her chance of dying earlier 277 (82.4%). More than half, 266 (77.3%) of the respondents had not heard from friends that modern contraceptives are the cause of many sexually transmitted infections including HIV. 264(76.5%) did not fear the consequences of being seen by friends at MCH/FP collecting contraceptive pills (table 4.6)

**Table 4.6: Perception/attitude and fear of side effects**

<b>Statement</b>	<b>SD (%)</b>	<b>D (%)</b>	<b>U (%)</b>	<b>A (%)</b>	<b>SA (%)</b>
Health care providers are abusive and not willing to assist in the provision and in choosing the appropriate contraceptives	308(89.3)	3(0.9)	3(0.9)	13(3.8)	18(5.2)
There is no need of using contraceptives when one is aware of her HIV status	325(94.2)	0(0)	11(3.2)	0(0)	9(2.6)
Because of my status, I must use a convenient and effective method of contraception preferably dual method to avoid infecting my partner	1(0.3)	0(0)	5(1.4)	0(0)	339(98.8)
Contraceptive methods available have life threatening side effects and I cannot use them despite my status	180(52.6)	8(2.3)	36(10.5)	15(4.4)	103(30.1)
Use of modern contraception by a HIV positive woman increases her chance of dying earlier	275(81.8)	2(0.6)	54(16.1)	2(0.6)	3(0.9)
I have heard from friends that modern contraceptives are the cause of many sexually transmitted infections including HIV	264(76.7)	2(0.6)	32(9.3)	5(1.5)	41(11.9)
I was adequately counseled on the use of effective and long acting modern contraception in reducing the burden of HIV, especially among the new-born before I was commenced on antiretroviral therapy	133(38.6)	5(1.4)	7(2)	0(0)	200(58)
I fear the consequences of being seen by my friends at MCH/FP collecting contraceptive pills	264(76.5)	0(0)	0(0)	0(0)	81(23.5)

**KEY:** SD=Strongly Disagree, D=Disagree, U=Undecided, A=Agree, SA=Strongly

Agree

#### 4.12 Factors associated with contraceptive choice

As indicated in table 4.7, age, religion, access to contraceptives and challenges were factors significantly associated with choice of contraceptives ( $p < 0.05$ )

**Table 4.7: Factors associated with contraceptive choice**

Factor	Contraceptive type		$\chi^2$ - value	P-value
	Hormonal	Non-hormonal		
<b>Age</b>				
<30	74(70.5)	31(29.5)	14.852	<0.001
≥30	104(47.7)	114(52.3)		
<b>Education</b>				
≤Primary	104(59.4)	71(40.6)	2.938	0.230
Secondary	61(51.3)	58(48.7)		
Tertiary	17(47.2)	19(52.8)		
<b>Religion</b>				
Catholic	28(35.9)	50(64.1)	18.384	<0.001
Protestant	152(61.5)	95(38.5)		
Muslim	2(66.7)	1(33.3)		
Others	0(0)	2(100)		
<b>Marital status</b>				
Never married	21(55.3)	17(44.7)	1.527	0.676
Married	108(56.2)	84(43.8)		
Divorced/sep	34(57.6)	25(42.4)		
Widow	19(46.3)	22(53.7)		
<b>Parity</b>				
None	20(71.4)	8(28.6)	5.669	0.129
1-2	77(59.7)	52(40.5)		
3-5	68(50.7)	66(49.3)		
>5	16(48.5)	17(51.5)		
<b>Occupation</b>				
Formally employed	14(40)	21(60)	5.721	0.057
Self employed	94(60.6)	61(39.4)		
Unemployed	71(51.8)	66(48.2)		
<b>Residence</b>				
Rural	94(55)	77(45)	0.005	0.945
Urban	88(55.3)	71(44.7)		
<b>Access to contraceptives</b>				
CCC	50(35)	93(65)	43.246	<0.001
Other hospital section	53(63.9)	30(36.1)		
Private chemist	65(74.7)	22(25.3)		
Other	12(80)	3(20)		
<b>Influenced choice</b>				
Partner	6(37.5)	10(62.5)	6.408	0.171
Healthcare provider	16(57.1)	12(42.9)		
Joint decision	43(50)	43(50)		
woman's own choice	115(58.7)	81(41.3)		
Friends	0(0)	2(100)		
<b>Experience challenges</b>				
Yes	3(25)	9(75)	4.490	0.034
No	177(56)	139(44)		
<b>Attitude</b>	18.78(SD4.3)	18.16 (SD3.8)	1.351	0.178



#### 4.13 Determinants of contraceptive choice

Multiple logistic regression indicated that controlling for occupation, age ( $P < 0.001$ ), religion ( $P = 0.012$ ), access to contraceptives ( $P < 0.001$ ) and facing challenges ( $P = 0.016$ ) were significant determinants of contraceptive choice ( $p < 0.05$ ). Those below 30 years were less likely to choose non-hormonal contraceptives compared to those 30 years and above (OR; 95%CI: 0.341; 0.195-0.598). Those affiliated with catholic religion were 2 times more likely to choose non hormonal contraceptives compared to Protestants (OR; 95%CI: 2.226; 1.192-4.158). Those accessing contraceptive at the CCC were 11 times more likely to choose non-hormonal contraceptives compared to those accessing from other places (OR; 95%CI: 11.265; 2.914-43.551). Those experiencing challenges in accessing contraceptives were 6 times more likely to choose non-hormonal contraceptives compared to those not (OR; 95%CI: 6.246; 1.410-27.673) as indicated in table 4.8

**Table 4.8: Determinants of contraceptive choice**

Determinant	regression coefficient( $\beta$ )	OR(95%CI)	P-value
Age (<30)	-1.076	0.341(0.195-0.598)	<0.001
Religion (catholic)	0.800	2.226(1.192-4.158)	0.012
Occupation (ref=unemployed)			
Employed	0.697	2.007(0.083-5.016)	0.136
Self employed	0.017	1.017(0.588-1.758)	0.953
Access to contraceptive(ref=other)			
CCC	2.422	11.265(2.914-43.551)	<0.001
Other hospital section	0.856	2.353(0.588-9.416)	0.226
Private chemist	0.759	2.137(0.532-8.589)	0.285
Face Challenges (Yes)	1.832	6.246(1.410-27.673)	0.016

#### **4.14 Findings from key informants (Healthcare workers)**

A total of five health care providers were involved in the study to find out their views on contraceptive choices among the family planning clients attending CCC. All the HCP advocated for the use of a contraceptive method by the HIV infected women and described the organization of FP services in the CCC as fair.

When asked about factors influencing contraceptive choices, availability of limited choices and client fears and misconception were reported as the main determinants among the clients. Other factors reported influence contraceptive choices include client's socio demographic characteristics, knowledge of FP as well as cultural and religious backgrounds. The health care providers were also in agreement that dual method of contraception was the best option for the women infected with HIV. All the health care providers expressed the need of partner involvement in decision making about contraception among the female clients seeking for services at CCC

#### **4.15 Focused Group Discussion**

The women were grouped into a group of eight members and several themes were discussed. They all reported that their reception and treatment by the health care providers was good and never felt harassed on any occasion during their numerous visits. When asked what contraception is, all knew that it was a method of preventing pregnancies. Most were not clear however on the use of dual method in preventing the spread of HIV/AIDS despite the fact that they used the method more after knowledge of their HIV status.

When asked about who influenced their decision to use a specific method, most said that it was their personal decision and partner influence was minimal. They were also asked whether they were satisfied by the FP services at the CCC. Most reported that it was a setback that insertion of implants and other invasive methods could not be done at the AMPATH FP clinic. They felt that many missed the opportunity of using the method because they could afford to pay for the service in other sections of the hospital.

## **CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS**

### **5.1 Introduction**

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. This study assessed the determinants of choice of modern contraceptives among HIV positive women of reproductive age in Trans-Nzoia west district.

### **5.2 Knowledge levels of respondents on modern contraception.**

Correct use of most user dependent methods requires a basic knowledge of reproduction and literacy skills to follow written instructions as well (Mitchell and Stephens, 2004).

In the current study, 343 (98.8%) had heard of modern family planning of which 208 (60.6%) heard from health care providers. This implied that general knowledge of family planning was wide spread among the study participants. The findings are in agreement with KDHS 2008/09 report where knowledge on family planning was universal and 95% of the women interviewed knew of at least one modern method of family planning. Just like in this study, KDHS 2008/09, report that among women, the most widely known modern methods of contraception are male condoms, injectables, and pills, with about 89% of all women saying they know of these methods. In the current study, 34.6% of the women reported to prefer the chosen method because it was more effective and 73% rated the effectiveness of their chosen method as high. This implied that they were aware of the effectiveness of their method of choice in relation to the method's ability to prevent unintended pregnancies. These findings are in agreement with those that correct knowledge should include how the various methods work, family planning method's

safety and side effects, and address the issues of misinformation (Family planning guidelines, 2010). Further, a couple's acceptance of modern methods is all too often limited because they do not know how modern methods work or they think methods have an adverse influence on their ability to conceive later. Perception/attitude on modern family planning was generally positive based on the responses to the specific questions asked to the study participants.

### **5.3 Types of modern contraceptives used by HIV infected women**

Despite reported risks of hormonal contraceptives in HIV, most of the study participants were using hormonal and short acting type of contraceptive methods (Depo-Provera 133 (38.3%), Implants 56 (16.1%) and Pills 13 (3.7%)). A study in South Africa found similar results where a vast majority of women were using the three monthly injectable and a small percentage were using LAPMS (Crede et al., 2012).

Male condom was widely used by the respondents 110 (31.7%) and this was attributed the health care provider's recommendation for use. The findings are consistent with other studies conducted at HIV clinics in Uganda where condom was commonly used due to easier access and frequent exposure to counselling promoting condom use (Wenyenze et al. 2011). Similar reasons for increased condom use could be cited among the current study sample.

Intra uterine devices (IUDs) were used by only 5 (1.4%) of the respondents. Of importance is that the IUD can be used on clinically well HIV positive women (WHO, 2004). This message needs to be communicated to all participants during contraceptive counselling. Dual method contrary to the expectation was only used by about 21 (6%) of

the study participants. Health care providers influence on the choice of other contraceptives was minimal (7.9%). This is contrary to the findings in Ethiopia (Yemane Berhane et al. 2013) where common reasons for method choice was health professional's advice (32.3%) and Dual method was widely used (59.9%).

Reasons cited for method preference in this study were that they were more effective (34.6%), easy to use 25.1%, perceived less side effects 25.9%, readily available 9.2%, and less costly 5.2%. This finding is similar to findings in South Africa where choice was based on effectiveness, absence of side effects and convenience of use (Crede et al., 2012). Thus, in addition to availing the long acting and permanent methods of contraception, convenience of LAMP should also be communicated to women during counselling if these are the determining factors in their choice of method.

A study by Ross *et al.*, (2001) of contraceptive method choice in developing countries confirmed that prevalence is highest in countries where access to a wide range of methods is uniformly high. However, there are still some countries in sub-Saharan Africa which offer a limited choice of contraceptive methods and couples cannot easily choose the method that best suits their reproductive needs (Ross *et al.*, 2001).

#### **5.4 Factors influencing contraceptive choices**

The factors that influence contraceptive use are multifaceted and challenging. In the current study, multivariate logistic regression revealed that age, religion, access to contraceptives and experience of challenges were significant determinants of contraceptive choices ( $p < 0.05$ ). Those below 30 years were less likely to choose non-hormonal contraceptives compared to those 30 years and above (OR; 95%CI: 0.341;

0.195-0.598). Those affiliated with catholic religion were 2 times more likely to choose non hormonal contraceptives compared to Protestants (OR; 95%CI: 2.226; 1.192-4.158). Those accessing contraceptive at the CCC were 11 times more likely to choose non-hormonal contraceptives compare to those accessing from other places (OR; 95%CI: 11.265; 2.914-43.551). Those experiencing challenges in accessing contraceptives were 6 times more likely to choose non-hormonal contraceptives compared to those not (OR; 95%CI: 6.246; 1.410-27.673).

In the current study, 321 (93%) of the respondents reported that cultural beliefs did not influence their choice and use of contraception. This is contrary to another finding in Kenya (Maticka-Tyndale, 2012) where negative socio-cultural influence led to low acceptance of condom use.

According to the health belief model developed by Becker 1974, individual perceptions such as perceived seriousness of pregnancy, perceived benefits and perceived barriers are more likely to affect use of contraception which can prevent unplanned pregnancy.

Provider's negative attitudes can also prevent use of services. This is contrary to the findings in the current study where attitude did not significantly influence choice of contraceptive. This could be attributed to the fact that the current study assessed users' attitude and not providers.

Both demographic and socio-economic determinants of use of reproductive health services are mediated by cultural influences on health care seeking behavior that shape the way an individual perceives her own health and available health services. This is contrary to findings in the current study where culture/ and beliefs were reported not to influence contraceptive choice.

Effective access may in turn be defined in terms of knowledge of source of family planning information and other services, and the extent to which other constraints that limit utilization of those services exist. Such constraints may include the cost of contraception, social barriers and quality of services available (Curtis and Neitzel, 1996). Cost has been shown to be a barrier in service use (Bloom *et al.*, 1999, Griffiths & Stephenson, 2001) and it also influences the choice of source from which care is sought. This is also supported by findings from the current study where access was found to significantly influence choice of contraceptives. Cost for services including travel costs, lost wages, or lost time for non wage carriers, costs for child care and fees for services as well as inadequate essential supplies impacts negatively on contraceptive choices and use by the women.

## **5.5 Conclusion**

In conclusion, significant predictors of contraceptive choices in this study were age, religion, access and experience of challenges including cost and commodity shortages. Knowledge of modern contraceptive methods among the study participants was generally high. However, use of certain long acting and permanent methods available in the hospital such as IUDs, Implants and Bilateral tubal ligation was low. Dual method was only used by a small percentage of the study participants. The high rates of unmet need for family planning among the HIV positive women in Kenya, suggests that the WHO'S strategy of preventing unintended pregnancies amongst the HIV positive women to minimize vertical transmission of HIV must be reinforced. Long acting and permanent methods of contraception could fill an important gap in family planning services among this group in Kenya.



## 5.6 Recommendations

- Kitale County Referral Hospital has done quite well in contraceptive services to women infected with HIV. However given the low LAMP contraceptive prevalence among the study participants, there is need for comprehensive education on contraception and advocacy for use of long acting or permanent methods of contraception among the HIV positive women in Kenya. Future efforts must focus on increasing women's knowledge about safe, effective and long acting contraceptive options, thereby preparing them to make a fully informed choice
- Governmental and nongovernmental organizations, health facilities and other stakeholders need to ensure availability, accessibility and sustained advocacy for use of available and appropriate contraceptive methods for HIV infected couples. This can be achieved by strengthening provider's capacity to promote and deliver an expanded range of contraceptive methods and establishing provision of such comprehensive services as a standard performance expectation.
- Initiatives should focus on resolving the challenges associated with uptake of highly effective and permanent contraceptive methods.
- There is need for researchers to investigate impact of effective FP counselling before initiation of ARVs on uptake and method choice by HIV infected women.

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<b>B. <u>Social Demographic Data</u></b>		
1. Age of the respondent(years)		
1) 15-19	<input type="checkbox"/>	V3 <input type="checkbox"/>
2) 20-24	<input type="checkbox"/>	
3) 25-29	<input type="checkbox"/>	
4) 30-34	<input type="checkbox"/>	
5) 35-39	<input type="checkbox"/>	
6) 40-45	<input type="checkbox"/>	
7) 46-49	<input type="checkbox"/>	
2. Marital status		
1) Never married	<input type="checkbox"/>	V4 <input type="checkbox"/>
2) Married	<input type="checkbox"/>	
3) Divorced/separated	<input type="checkbox"/>	
4) Widowed	<input type="checkbox"/>	
3. Parity /number of children_____		V5 <input type="checkbox"/>
4. Level of Education		
1) None	<input type="checkbox"/>	V6 <input type="checkbox"/>
2) Primary	<input type="checkbox"/>	
3) Secondary	<input type="checkbox"/>	
4) College	<input type="checkbox"/>	
5) University	<input type="checkbox"/>	
5. Occupational status		
1) Formally employed	<input type="checkbox"/>	V7 <input type="checkbox"/>

2) Self employed <input type="checkbox"/>	
3) Unemployed <input type="checkbox"/>	
6. Residence	
1) Rural <input type="checkbox"/>	
2) Urban <input type="checkbox"/>	V8 <input type="checkbox"/>
7. Religion	
1) Catholic <input type="checkbox"/>	
2) Protestant <input type="checkbox"/>	
3) Muslim <input type="checkbox"/>	V9 <input type="checkbox"/>
4) Hindu <input type="checkbox"/>	
5) Others(specify)_____	
<b>C. <u>Knowledge and use of modern contraception</u></b>	
1. Have you ever heard of contraception?	
1) Yes <input type="checkbox"/>	
2) No <input type="checkbox"/>	V10 <input type="checkbox"/>
a. If yes, from which source?	
1) Radio <input type="checkbox"/>	
2) Television <input type="checkbox"/>	
3) Print media <input type="checkbox"/>	
4) Religious gathering <input type="checkbox"/>	V11 <input type="checkbox"/>
5) Health care provider <input type="checkbox"/>	
b. If yes, which of the listed methods have you heard of?	
1) Pills <input type="checkbox"/>	



2) Injectables/Depo-Provera	<input type="checkbox"/>	V12 <input type="checkbox"/>
3) Implants	<input type="checkbox"/>	
4) IUCD	<input type="checkbox"/>	
5) Vasectomy	<input type="checkbox"/>	
6) Bilateral tubal ligation	<input type="checkbox"/>	
7) Female condom	<input type="checkbox"/>	
8) Male condom	<input type="checkbox"/>	
9) Natural methods	<input type="checkbox"/>	
Others _____		
Indicate the contraceptive method you are currently using (tick all that apply)		
Pills	<input type="checkbox"/>	V13 <input type="checkbox"/>
Injectables/Depo-Provera	<input type="checkbox"/>	
Implants	<input type="checkbox"/>	
IUCD	<input type="checkbox"/>	
Vasectomy	<input type="checkbox"/>	
Bilateral tubal ligation	<input type="checkbox"/>	
Female condom	<input type="checkbox"/>	
Male condom	<input type="checkbox"/>	
Natural methods	<input type="checkbox"/>	
Others _____		
2. When did you start using the above mentioned method of contraception?		

<p>1) Before the first born was delivered <input type="checkbox"/></p> <p>2) Soon after delivery of first born <input type="checkbox"/></p> <p>3) After I learnt and accepted my HIV status <input type="checkbox"/></p> <p>4) Other time_____</p>	<p>V14 <input type="checkbox"/></p>
<p>3. For what purpose did you uptake the chosen method of contraception?</p> <p>1) To avoid pregnancy <input type="checkbox"/></p> <p>2) To prevent spread of HIV/AIDS <input type="checkbox"/></p> <p>3) Both of the above reasons <input type="checkbox"/></p>	<p>V15 <input type="checkbox"/></p>
<p>4. Why do you prefer the method mentioned above?</p> <p>1) Readily available <input type="checkbox"/></p> <p>2) Easy to use <input type="checkbox"/></p> <p>3) More effective <input type="checkbox"/></p> <p>4) Less costly <input type="checkbox"/></p> <p>5) Fewer side effects <input type="checkbox"/></p> <p>Any other reason_____</p>	<p>V16 <input type="checkbox"/></p>
<p>5. Did the initiation of antiretroviral drugs affect your usual method of contraception?</p> <p>1) Yes <input type="checkbox"/></p>	

<p>2) No <input type="checkbox"/></p> <p>If yes, why_____</p> <p>If no, explain_____</p> <p>6. Who influenced your decision to use contraception?</p> <p>1) Partner <input type="checkbox"/></p> <p>2) Health care provider <input type="checkbox"/></p> <p>3) Joint decision between husband and the woman <input type="checkbox"/></p> <p>4) Woman's own decision <input type="checkbox"/></p> <p>5) Friends <input type="checkbox"/></p> <p><b><u>D. Availability and effectiveness of methods</u></b></p> <p>1. Where do you normally access your preferred method of contraception?</p> <p>1) Within CCC <input type="checkbox"/></p> <p>2) Another section of the hospital <input type="checkbox"/></p> <p>3) Private chemist shop <input type="checkbox"/></p> <p>4) Others,(Specify)_____</p> <p>2. Do you experience challenges accessing contraceptive method of your choice at the facility?</p>	<p>V17 <input type="checkbox"/></p> <p>V18 <input type="checkbox"/></p> <p>V19 <input type="checkbox"/></p>
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<p>1) Yes <input type="checkbox"/></p> <p>2) No <input type="checkbox"/></p> <p>If yes, list the challenges _____</p>	<p>V20 <input type="checkbox"/></p>
<p>3. How would you rate the effectiveness of your chosen method of contraception?</p> <p>1) Low <input type="checkbox"/></p> <p>2) Medium <input type="checkbox"/></p> <p>3) High <input type="checkbox"/></p>	<p>V21 <input type="checkbox"/></p>
<p>4. Did your knowledge on the method's effectiveness determine your choice of contraception?</p> <p>1) Yes <input type="checkbox"/></p> <p>2) No <input type="checkbox"/></p>	<p>V22 <input type="checkbox"/></p>
<p><b>E. <u>Religious beliefs/cultural factors</u></b></p>	
<p>1. Does your religion/faith prohibit use of modern contraception?</p> <p>1) Yes <input type="checkbox"/></p> <p>2) No <input type="checkbox"/></p>	<p>V23 <input type="checkbox"/></p>
<p>If yes, has it influenced your choice and uptake of contraception?</p> <p>1) Yes <input type="checkbox"/></p>	<p>V24 <input type="checkbox"/></p>

2) No

2. Does your traditions/culture influence your choice and use of  
contraception?

1) Yes

2) No

If yes, explain \_\_\_\_\_

V25

**F. Perception/attitude and fear of side effects**

<b>STATEMENT</b>	<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>
Health care providers are abusive and not willing to assist in the provision and in choosing the appropriate contraceptives					
There is no need of using contraceptives when one is aware of her HIV status					
Because of my status, I must use a convenient and effective method of contraception preferably dual method to avoid infecting my partner					
Contraceptive methods available have life threatening side effects and I cannot use them despite my status					
Use of modern contraception by a HIV positive woman increases her chance of dying earlier					
I have heard from friends that modern contraceptives are the cause of many sexually transmitted infections including HIV					
I was adequately counseled on the use of effective and long acting modern contraception in reducing the burden of HIV, especially among the new borns before I was commenced on antiretroviral therapy					
I fear the consequences of being seen by my friends at MCH/FP collecting contraceptive pills					

**Interview guide for health care providers on determinants of contraceptive choices among HIV positive women aged 15-49 years attending comprehensive care centre at Kitale District Hospital.**

RESPONDENT NUMBER	V26 <input type="checkbox"/>
<b><u>BIODATA:</u></b>	
1. Age: <input type="checkbox"/> years.	
2. Sex:	
1) Male <input type="checkbox"/>	V27 <input type="checkbox"/>
2) Female <input type="checkbox"/>	
3. Marital status:	
1) Never married <input type="checkbox"/>	
2) Married <input type="checkbox"/>	V28 <input type="checkbox"/>
3) Divorced/separated <input type="checkbox"/>	
4) Widowed <input type="checkbox"/>	
4. Education level:	
1) Primary <input type="checkbox"/>	
2) Secondary <input type="checkbox"/>	V29 <input type="checkbox"/>
3) College <input type="checkbox"/>	
4) university <input type="checkbox"/>	
5. Religion	
1) Catholic <input type="checkbox"/>	
2) Protestant <input type="checkbox"/>	
3) Muslim <input type="checkbox"/>	V30 <input type="checkbox"/>
4) Hindu <input type="checkbox"/>	

<p><b>6. Designation.....</b></p> <p><b>7. No. of years in the profession.....</b></p> <p><b>8. No. of years working with HIV infected population.....</b></p> <p><b>9. Any in-service training on:</b></p> <p style="padding-left: 40px;"><b>a) FP</b></p> <p style="padding-left: 80px;">1) Yes <input type="checkbox"/></p> <p style="padding-left: 80px;">2) No <input type="checkbox"/></p> <p style="padding-left: 40px;"><b>b) FP counseling</b></p> <p style="padding-left: 80px;">1) Yes <input type="checkbox"/></p> <p style="padding-left: 80px;">2) No <input type="checkbox"/></p> <p style="padding-left: 40px;"><b>c) PMTCT</b></p> <p style="padding-left: 80px;">1) Yes <input type="checkbox"/></p> <p style="padding-left: 80px;">2) No <input type="checkbox"/></p>	<p>V31 <input type="checkbox"/></p> <p>V32 <input type="checkbox"/></p> <p>V33 <input type="checkbox"/></p>
<b><u>INTERVIEW QUESTIONS</u></b>	
<p>1) From experience, how would you describe the organization of FP services within the AMPATH CCC?</p> <p style="padding-left: 40px;">1) Good <input type="checkbox"/></p> <p style="padding-left: 40px;">2) Fair <input type="checkbox"/></p> <p style="padding-left: 40px;">3) Poor <input type="checkbox"/></p>	<p>V34 <input type="checkbox"/></p>
<p>2) As regards to the supply of contraceptive commodities, do at times experience shortage of any of the contraceptive methods?</p> <p style="padding-left: 40px;">1) Yes <input type="checkbox"/></p>	<p>V35 <input type="checkbox"/></p>



2) No <input type="checkbox"/>	
<p>3) In your opinion, what challenges do the clients you attend to experience while seeking for their desired contraceptive choices?</p> <p>1) Commodity shortages <input type="checkbox"/></p> <p>2) Limited choices <input type="checkbox"/></p> <p>3) High prices <input type="checkbox"/></p> <p>4) Stigma/fears <input type="checkbox"/></p> <p>Others _____</p>	V36 <input type="checkbox"/>
<p>4) Do you as a health care worker have any objection to the use of contraception by the HIV infected women?</p> <p>1) Yes <input type="checkbox"/></p> <p>2) No <input type="checkbox"/></p> <p>If yes, give reasons; _____</p>	V37 <input type="checkbox"/>
<p>5) From your own experience, what is the general attitude of other health care staff towards contraceptive use by the HIV infected women?</p> <p>1) Positive <input type="checkbox"/></p>	V38 <input type="checkbox"/>

<p>2) Negative <input type="checkbox"/></p>	
<p>6) What is your take on a client using a condom in combination with another FP method of their choice?</p> <p>1) Waste of resources <input type="checkbox"/></p> <p>2) Acceptable and recommended <input type="checkbox"/></p> <p>Give reasons for your answer_____</p>	<p>V39 <input type="checkbox"/></p>
<p>7) In your own opinion, what are the factors that influence choice of contraception among the HIV infected women seeking for services at AMPATH CCC?</p> <p>1) Socio economic characteristics of the woman <input type="checkbox"/></p> <p>2) Knowledge of FP <input type="checkbox"/></p> <p>3) Staff attitude <input type="checkbox"/></p> <p>4) Availability <input type="checkbox"/></p> <p>Others_____</p>	<p>V40 <input type="checkbox"/></p>
<p>8) In your own view, do you think men should be involved in decision making about contraceptive choices amongst your FP clients?</p> <p>1) Yes <input type="checkbox"/></p>	<p>V41 <input type="checkbox"/></p>

<p>2) No <input data-bbox="646 201 711 247" type="checkbox"/></p> <p>If yes,</p> <p>explain _____</p>	
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**FGD Interview schedule for the determinants of contraceptive choices among HIV positive women aged 15-49 years attending comprehensive care centre at Kitale district hospital.**

- i.** What is contraception?
- ii.** Please kindly mention some of the family planning methods you know
- iii.** In your own view, what are the health benefits of using modern methods of contraception?
- iv.** Are there any specific benefits of using modern contraception by the HIV infected females?
- v.** What factors does one consider before choosing a contraceptive method?
- vi.** Are there religious and cultural beliefs that influence your choice of contraception?
- vii.** What is your take on the treatment you receive from the health care providers when you go for FP services?
- viii.** Are your preferred methods of contraception always available at the facility?
- ix.** What influenced you to use the method you are currently using?
- x.** Do you involve you partner in decision making about contraception?
- xi.** What difficulties do you encounter while seeking for FP services at the AMPATH CCC?
- xii.** Does one's knowledge about her HIV status influence their choice of contraception?

## **APPENDIX II: INFORMED CONSENT FORM**

My name is **CHERUIYOT EDWARD KIPLAGAT**. I am a Masters student from Kenyatta University. I am conducting a study on “**Determinants of contraceptive choices among HIV positive women aged 15-49 years attending Comprehensive Care Centre at Kitale district hospital.**” The information obtained will be used by the Ministry of Health and the Division of Reproductive Health to implement interventions that will improve the quality of life, wellbeing and condition of HIV infected women seeking for services at comprehensive care centres.

### **Procedure to be followed**

Participation in this study will require that I ask you some questions in order to get the determinants of your choice of contraception. I will record the information from you in a questionnaire.

You have the right to refuse participation in this study. You will receive the same care and medical treatment whether you agree to join the study or not and your decision will not change the care you will receive from the centre today or that you will get from any other clinic at any other time.

Please remember that participation in the study is voluntary. You will ask questions related to the study at any time.

You may refuse to respond to any questions and you may stop an interview anytime. You may also stop being in the study at any time without any consequences to the services you receive from the CCC or any other organization now or in the future.

### **Discomforts and Risks**

Some of the questions you will be asked are on intimate subject and may be embarrassing or may make you uncomfortable. If this happens, you may refuse to answer these questions if you so choose. The interview may delay you for approximately twenty minutes before you receive your routine care.

### **Benefits**

Your participation in this study will help me contribute to the existing knowledge on the area of reproductive choices for HIV infected women and hence contribute to the attainment of Millennium Development goals 4&5. You will also be able to take an active role in your health hence improve your condition, wellbeing and quality of life through implementation of the proposed interventions.

### **Rewards**

This study will not attract any direct rewards to the participant.

### **Confidentiality**

The interviews will be conducted in a private setting within the CCC. Questionnaires will be coded and your name will not be recorded. The questionnaires will be kept in a locked cabinet for safe keeping at Kenyatta University. Everything will be kept private.

### **Contact information**

If you have any questions you may contact my supervisors; **Dr.J.Kariuki on 0722495458** or **Dr.G.M.Okumbe on 0715554229** or the Kenyatta University Ethical Review Committee secretariat on [kuerc@ku.ac.ke](mailto:kuerc@ku.ac.ke).

### **Participant's statement**

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will still get the same care and medical treatment whether I decide to leave the study or not and my decision will not change the care I will receive from the clinic today or that I will get from any other clinic at any other time.

Name of the participant: \_\_\_\_\_

Signature/thumbprint: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

### **Investigator's statement**

I, the undersigned, have explained to the volunteer in a language she understands the procedures to be followed in the study and the risks and benefits involved.

Name of the interviewer: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX III



**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No.

Date:

**20<sup>th</sup> November, 2014**

**NACOSTI/P/14/0590/3826**

Edward Kiplagat Cheruiyot  
Kenyatta University  
P.O. Box 43844-00100  
NAIROBI.

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *"Determinants of contraceptive choices among HIV Positive women aged 15-49 years attending Comprehensive Care Centres at Kitale District Hospital,"* I am pleased to inform you that you have been authorized to undertake research in **Transzoia County** for a period ending **30<sup>th</sup> June, 2015**.

You are advised to report to **the Medical Superintendent, Kitale District Hospital, the County Commissioner, the County Director of Education and the County Coordinator of Health, Transzoia County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**DR. S. K. LANGAT, OGW**  
**FOR: SECRETARY/CEO**

Copy to:

The Medical Superintendent  
Kitale District Hospital.

## APPENDIX IV



# THE PRESIDENCY

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telephone: 054 – 30020

Fax No: 054 – 30030

E-mail: [cctransnzoiacounty@yahoo.com](mailto:cctransnzoiacounty@yahoo.com)

When replying please quote

COUNTY COMMISSIONER  
TRANS NZOIA COUNTY  
P.O BOX 11 - 30200

9<sup>th</sup> January, 2015

REF: TNZC/CONF/ED. 12/VOL. 1(135)

**TO WHOM IT MAY CONCERN**

**RE: RESERCH AUTHORIZATION**

This is to inform you that **Mr. Edward Kiplagat Cheruiyot of Kenyatta University Nairobi** has been authorized by National Commission for Science, Technology and innovation to carry out research on **“Determinants of contraceptive choices among HIV Positive women aged 15-49 years attending Comprehensive Care Centre’s at Kitale District Hospital,”** for a period ending 30<sup>th</sup> June, 2015.

Please accord him the necessary assistance.

  
JOASHI ABONGO

COUNTY COMMISSIONER  
TRANS-NZOIA COUNTY  
P. O. Box 11 - 30200 KITALE

P.P.

FOR: COUNTY COMMISSIONER  
TRANS NZOIA COUNTY



### APPENDIX V: MAP OF TRANS NZOIA COUNTY

