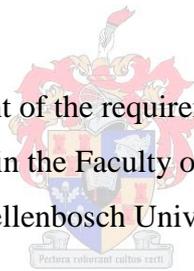


ROLE OF CONTRACEPTION IN HIV PREVENTION

by

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March 2013

DECLARATION

By submitting this assignment electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: March 2013

DEDICATION

This work is dedicated to my late parents: Mother, Astride Mbelu and Father, Gilbert Lufuluabo for the inspired vested interest for science.

To my wife Julienne Bidingisha and two daughters: Daniella and Emmanuella for their longstanding patience, sacrifices and discipline in giving me time to complete this study ; most importantly for their continuous support and love, making them the cornerstone of this achievement.

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I would like to thank all the women who consented and spend their time to participate in this study. their contribution will serve to the amelioration of women reproductive health in general, and those living with HIV in particular.

Above all, I give glory to the Almighty God for his grace and compassion. But also for the strength and given opportunity to gain new knowledge to serve humankind.

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ABBREVIATIONS AND ACRONYMS

AIDS:	Acquired Immune Deficiency Syndrome
ANC:	Antenatal clinic
ART:	Antiretroviral Therapy
ARV:	Antiretroviral (drugs)
BAIS:	Botswana HIV/AIDS Impact Survey
BFHS:	Botswana Family Health Survey
CD4 Cells:	Cluster of Differentiation 4 Cells
CROI :	Conference on Retroviruses and Opportunistic Infections
DHMT:	District Health Management Team
FP:	Family Planning
FHI:	Family Health International
HAART:	Highly Active Antiretroviral Therapy
HIV:	Human Immunodeficiency Virus
HRDD:	Health Research Development Division
IDCC:	Infectious Disease Care Clinic
KPH:	Kasane Primary Hospital
PEPFAR:	President's Emergency Plan for AIDS Relief
PLWHA:	People living with HIV & AIDS
PMTCT:	Prevention of Mother -to-child transmission of HIV
STD:	Sexually Transmitted Diseases
STIs:	Sexually Transmitted Infections
SRH:	Sexual and Reproductive Health
UNAIDS:	United Nations Acquired Immune Deficiency Syndrome
USAID:	United States Agency for International Development
WHO:	World Health Organization

ABSTRACT

Reproductive health of people living with HIV/AIDS is a significant public health issue because of its associated risks of HIV transmission to both, the baby and the sexual partner. Provision of effective contraceptive to HIV-positive women is a proven prevention strategy, and can help prevent unintended pregnancy and other sexually transmitted infections. Unmet need for contraception in developing world and rates of unintended pregnancies among women living with HIV remain highly prevalent. The objectives of this study were to identify the current knowledge of HIV-positive women on existing contraceptive methods, determine their current contraceptive practices, identify barriers to contraception use, and provide recommendations on how contraception uptake can be improved among these women in Kasane. A cross-sectional study using qualitative technique was used among twenty five (25) participants at Kasane Primary Hospital. In-depth interviews were conducted with the help of research assistants for data collection. Excel Microsoft Office Software was used for socio-demographics data entry and analysis, and qualitative data were analysed manually using descriptive statistics. Main reasons for low uptake of contraception were desire for children, partner refusal, side effects, and socio-cultural and religious factors. Contraception prevalence was 56 % and condom was the most used contraceptive method (36%). whereas the rate of unintended pregnancies was 60% . Knowledge of contraception was high (100%) but limited proportion of participants (12%) had an expanded understanding of contraception as a HIV prevention strategy. Most women living with HIV prefer to space, limit or stop childbearing but do not use any contraceptive method and found themselves with unintended pregnancy. Despite the good knowledge about contraception among participants, the uptake remained low. About half (44%) of the women interviewed were not on any contraceptive method. The choice to use contraception interferes with many factors and the desire to fulfil the primary reproductive intention of men and women, including those living with HIV, mostly override this choice. There is need for a strategic integrated approach that conveys HIV prevention messages and discusses the importance of planning a pregnancy. Thus promoting dual protection among women living with HIV.

OPSOMMING

Die voortplantingsgesondheid van mense wat met MIV/vigs leef, is 'n belangrike openbaregesondheidskwessie, aangesien voortplantingsgesondheid verband hou met die gevaar van MIV-oordrag na babas sowel as seksmaats. Daar is al bewys dat ander seksueel oordraagbare siektes sowel as onbeplande swangerskappe voorkom word as doeltreffende voorbehoedmiddels verskaf word aan vroue wat MIV-positief is. Dit behoeft aan voorbehoeding in ontwikkelende lande bly egter baie dikwels agterweë, en 'n groot persentasie vroue wat met MIV leef, raak onbepland swanger. Die doel met hierdie ondersoek is om vas te stel wat vroue wat MIV-positief is, tans oor bestaande voorbehoeding weet, watter voorbehoedingsmetodes hulle tans gebruik en watter struikelblokke daar vir die gebruik van voorbehoeding is, en om voorstelle te maak oor hoe 'n groter persentasie van hierdie vroue in Kasane oortuig kan word om voorbehoedmiddels te gebruik. 'n Deursnee-studie wat met behulp van kwalitatiewe tegnieke by die Kasane Primêre Hospitaal uitgevoer is, het vyf en twintig (25) deelnemers betrek. Met die hulp van navorsingsassistente is diepte-onderhoude gevoer om inligting in te samel. Microsoft Office se Excel-sagteware is gebruik om sosio-demografiese inligting in te voer en te ontleed, en kwalitatiewe inligting is met verwysing na beskrywende statistiek met die hand ontleed. Die vernaamste redes vir die trae gebruik van voorbehoeding was die begeerte na 'n kind, die teenstand van seksmaats, die nuwe-effekte, en sosio-kulturele en godsdienstige oorwegings. Daar is bevind dat 56% van die deelnemers voorbehoeding gebruik, dat kondome die algemeenste voorbehoedmiddel is (36%) en dat 60% van alle swangerskappe ongewens was. Die deelnemers was almal oor voorbehoeding ingelig (100%), maar slegs 'n klein persentasie (12%) het ook geweet dat voorbehoedmiddels 'n voorkomingstrategie vir MIV-infeksie is. Die meeste vroue wat met MIV leef, verkies om swangerskappe te versprei, te beperk of te verhoed, maar gebruik geen voorbehoedmiddels nie en het dus onbepland swanger geraak. Hoewel die deelnemers goed ingelig was oor voorbehoeding, het min van hulle dit gebruik. Ongeveer die helfte (44%) van die vroue met wie onderhoude gevoer is, het geen voorbehoeding gebruik nie. Die keuse om 'n voorbehoedmiddel te gebruik, word beïnvloed talle ander faktore, en mans en vroue se primêre begeerte om voort te plant – ook al leef hulle met MIV – weeg gewoonlik swaarder as hierdie keuse. Daar is 'n behoefte aan 'n strategiese, geïntegreerde benadering wat boodskappe oor MIV-voorkoming oordra en wat tuisbring hoe belangrik dit is om swangerskappe te beplan. Sodoende sal vroue wat met MIV leef, tweedoelige beskerming kry.

CHAPTER I INTRODUCTION

1.1 Introduction

HIV/AIDS is a pandemic that has afflicted the world for the last two decades. Africa is particularly affected by the pandemic with sub-Saharan Africa bearing an inordinate share of the global HIV burden and remains the most affected region in the global AIDS epidemic. More than two thirds (67%) of all people living with HIV and AIDS (PLWHA) worldwide with about 22.5 millions (20.9 millions – 24.2 millions) out of 33.3 millions of the global total live in sub-Saharan Africa. About 72% (1.3 million out of 1.8 million total deaths) of global AIDS-related deaths has occurred in this region by the end of 2009. Furthermore, the total number of newly infected people represents about 69.2% (1.8 million out of 2.6 million global total) with over 7,000 new HIV infections a day in 2009 (UNAIDS, 2010). Furthermore, the percentage of women and children living with HIV in regions such as sub-Saharan Africa and the Caribbean is significantly higher. Globally, at the end of 2008 it was estimated that around half of the 31.3 million adults living with HIV/AIDS were women and 2.1 million children were living with HIV (UNAIDS, 2009).

The aim of this study is to identify factors that contribute to low uptake of contraception with subsequent unintended pregnancies among HIV-positive women enrolled in antiretroviral therapy (ART) Clinic at Kasane Primary Hospital (KPH). There is a concern that significant proportion of HIV-infected women carries unintended pregnancies despite knowing their HIV status. Family planning has the potential to reduce HIV transmission; and is necessary to help HIV-infected women who desire and expect children to do so in a planned manner without discrimination and/or compromising their own health, well-being of their newborns, and their sexual partners. For these reasons, there is need to identify factors that hinder contraception uptake among HIV-positive women in Kasane.

1.2 Background

The sexual and reproductive health of women living with HIV/AIDS is fundamental to their well-being and that of their partners and children (WHO, 2006). Preventing transmission of HIV from Mother-To-Child and to their sexual partners is an issue of public health significance. Therefore, integration between family planning (FP) programs and HIV and AIDS care services constitute a priority for many countries worldwide, including Botswana.

Contraception is a cost-effective HIV prevention strategy (Cohen, 2008) but its uptake remains low among HIV-positive women. The United Nations (2011) estimate only 28.6% of women of reproductive age who are married or cohabiting use contraception in Africa as compare to the world average of 62.7%. Many studies conducted, in both developed and developing countries, have suggested the prevalence of unintended pregnancies is higher among women living with HIV, owing mainly to the low uptake of contraception. According to World Health Organization (2006) family planning have a great potential for leading the way in promoting sexual health and in efforts to prevent and treat HIV/AIDS and it has helped women worldwide to avoid millions of unintended pregnancies often associated with high risk of abortions since the sixties. Despite the known advantages of contraception, there is still a significant proportion of PLWHA who do not use contraception and carry unintended pregnancies though few are due to failure methods. Indeed, research into the HIV/AIDS health care system reveals that the unmet need for contraception among HIV-positive women and women at high risk of HIV is even greater than among women in the general population. According to a study published in *JAMA* in 2006, 84% of the pregnancies among women in three PMTCT programs in South Africa were unintended (as cited in Cohen, 2008). However, fertility desire is also remarkable among women living with HIV. A study conducted in Ontario, Canada by (Loutfy et al., 2009) on fertility desires and intentions of HIV-positive women shows about 69% of participants had a desire and 57% intend to become pregnant in the future. It has been concluded that the proportions of HIV-positive women of reproductive age living in Ontario desiring and intending pregnancy were higher.

Furthermore, the United Nations highlight that preventing unintended pregnancies among HIV positive women requires provision of quality FP services. FP services together with preventing primary HIV infection in women have been reported to significantly reduce the proportion of infants infected with HIV by 35%-45% (WHO, 2006).

One of the roles traditionally attributed to women that still influences African collective consciousness relates to motherhood which, in most African societies, plays a pivotal role in defining their condition as women. In African culture, woman's identity is closely related to her capacity to produce children. These cultural norms and societal expectations assign to African woman a specific role in procreation and attach significant interest and crucial

importance to a bigger family (N'guessan, 2010). This underline the sociocultural pressure experienced by women and might affect contraception uptake.

A study conducted by Ramashwar (2011) estimates that four in ten pregnancies worldwide were unintended in 2008, and the proportion was substantially higher in South America and southern Africa, where six in 10 were unintended. Unintended pregnancy reflect, among other factors, barriers to contraceptive access and use. It also found the global proportion of pregnancies that were unintended in 2008 was high (41%)—and even higher in such developing regions and sub regions as Latin America and the Caribbean (58%), South America (64%) and southern Africa (59%). The proportion was also high in North America (48%), exceeding the proportions in Europe's northern, southern and western regions (39–42%). Furthermore, a study in family planning confirms that unintended pregnancy rate remains high, particularly in developing regions, and especially in sub-Saharan Africa (Singh, Sedgh & Hussain, 2010).

Botswana is one of the most affected countries located in sub-Saharan Africa region. According to UNAIDS (2010) estimates and projections, there are 309,594 adults and 15,360 children living with HIV in Botswana. Women account for 57 percent of all those living with HIV. Additionally, the 2008 Botswana AIDS Impact Survey (BAIS III) conducted nationwide, revealed that Chobe remains one of the most affected districts with an HIV prevalence of about 23 percent whilst the data yielded a national HIV prevalence rate of 17,6 percent and over 25 % among those aged 15 – 49 years. This survey has also shown females have a relatively high prevalence rate of 20.4 percent and males 14,2 percent (BAIS III, 2009). These figures represent how severely the female gender is affected both at local and national levels.

Contraception is a cost-effective HIV prevention strategy in such a way that, using contraception HIV-positive women may not be able to carry an unintended pregnancy. Thus avoiding vertical transmission of HIV during pregnancy, delivery or breastfeeding. In addition, when using condom as contraceptive method, horizontal transmission of HIV infection to the sexual partner is significantly reduced. However, condoms have a significant user and method failure rate. Dual protection, the simultaneous use of an effective contraception method with consistent condom use, is recommended for effective prevention

of unintended pregnancy and HIV sexual transmission (Mitchell & Stephens, 2004). Therefore, dual protection is an effective strategy to prevent both vertical and horizontal transmission of HIV infection. A study conducted by Hladik et al. (2009) revealed that the 2008-2012 estimates on effects of FP use is projected to avert 21.6% of vertical infections whereas unmet FP needs may be responsible for 24.5% of infections. In addition, every day in Uganda, FP averts approximately 20 vertical infections and 9 paediatric AIDS deaths. Their comparative analysis suggests that existing FP services significantly contribute to the goals of PMTCT in Uganda, exceeding the current achievements of ARV-PMTCT alone.

The problem experienced in this context is low uptake of contraceptive methods among HIV-positive women in Kasane. There is need for policy-makers, health care workers and clients to understand the importance of contraception in the fight against HIV infection. This low uptake is more obvious when an HIV-positive female client who was often counselled on the need for family planning carries an unintended pregnancy at the next visit, is subject to an abortion, or is treated several times for STIs. Is it the stigma of seeking for family planning services at the health facility or fear of being identified as an HIV-positive person and rejected, distrusted with possible judgmental attitude from a sexual partner when opting for safe sex using condom?; The low consumption of contraception is a complex phenomenon and many factors seem to have a role to play. Planning a pregnancy will contribute to the better maternal health outcomes, help to prevent new HIV infections in infants born to HIV positive mothers and safeguard their reproductive rights.

The low uptake of contraception will result in unintended pregnancies, the risks of transmitting HIV to both newborns and sexual partners (discordant couples), STIs, and will likely increase the abortion rates, thus compromising maternal health. These consequences undermine the efforts to mitigate the burden of HIV disease.

This study has been urged by the absence of publications on the role of contraception in HIV prevention in Kasane and the results could serve as a bridge between the increased unmet needs for family planning among HIV positive women and the current low uptake of contraception. But also assist policy-makers in strategy formulation towards prevention and reduction of unintended pregnancies and STIs transmission including HIV.

1.3 Motivation for the research project

HIV positive births are consequences of the unmet needs of family planning among women living with HIV. The current Ministry of Health policies promote integration of family planning / reproductive health services and HIV/AIDS prevention, care and treatment services. The intention of this approach is to deliver a broader range of services to meet the increasing needs of PLWHA and also to improve cost-effectiveness in services delivery.

The Botswana Family Health Survey (2007) showed 52.8 % of women aged 12 to 49 years old interviewed used contraception in total with traditional method rated (2.6%) versus modern contraception (51.2 %). Among the modern method, condoms was predominantly used (41.7%), Injection (6.8%), pills (6.1 %), with female sterilization at (2.1%) and others sharing the lowest proportion (BFHS, 2007). However, despite the moderate contraception uptake, the Botswana's 2011 Sentinel Surveillance report revealed an increased number of unintended pregnancies with 6667 (98.8%) out of 6745 participating women, responding to the planned pregnancy question. Of these, 3383 (51%) reported the current pregnancy was unplanned. Unplanned pregnancies were higher among HIV-positive (56%) than HIV-negative women (49%). In addition, the same Sentinel Surveillance report shows that the adjusted HIV prevalence remained relatively high among pregnant women aged 15 to 49 years in Botswana and was estimated at 30.4% with Chobe district ranked fourth highest (37.1%). The 2011 Antenatal Sentinel Surveillance in Botswana also found an average HIV prevalence was 27.4% among those who planned their pregnancies as compared to 33.3% among those who reported their pregnancies were unplanned. There is a relationship between unplanned pregnancies and HIV prevalence.

Family planning through the use of contraception remains the better option to prevent unintended and unwanted pregnancies among women of reproductive age group and constitute a significant Prong in the PMTCT program for those living with HIV/AIDS. Prevention of Mother-to-Child Transmission (PMTCT) starts with preventing the HIV-positive mother from having an unintended pregnancy. This emphasizes the public health significance of providing effective FP services to PLWHA (WHO, 2006). The higher proportion of unplanned pregnancies among those who knew they were HIV-positive prior to the survey and among multigravid women suggest that current family planning services need to be strengthened as part of the Botswana PMTCT program.

The risk for both vertical and horizontal transmission of HIV and abortions is likely to increase as uptake of contraception remains low among PLWHA with inconsistent condoms usage. All these reasons serve as an encouragement to carry out the research to sensitize the policy-makers and programmes implementers on the role of contraception in HIV prevention. The yielded results is hoped to serve as an useful source of reference for this local community and generate information that will help in formulation of evidence based decisions by program implementers to strengthen the uptake of FP services.

1.4 Problem statement

The study will identify the factors that affect contraception uptake and leading to unintended pregnancies among HIV infected women in Kasane. Derived from the background and literature information pertaining to the project, the problem statement is: What are the factors that contribute to the low uptake of contraceptive methods among HIV-positive women in Kasane?

The current study will primarily benefit female clients of reproductive age group living with HIV infection who will understand that contraception is a cost-effective HIV prevention strategy and that using contraceptives HIV-positive women can achieve their fertility preferences to remain optimally healthy. The study may benefit to health care providers who will be reminded on the benefice of contraception in the fight of HIV infection. The study can also be beneficial to policymakers and government officials who may actively engage in the fight against the pandemic by drafting prevention strategies that are more focusing on contraception.

1.5 Aim of the study

The aim of the study was to investigate and identify the factors that contribute to the low uptake of contraceptive methods among HIV-positive women of reproductive age group (15-49 years) at Kasane Primary Hospital in order to improve contraception uptake among this category of population, and in so doing, to prevent unintended pregnancies, Sexually Transmitted Infections (STIs) including HIV and avoid HIV-positive births in the local community of Kasane.

1.6 Objectives

The objectives of the study are:

- To identify the current knowledge of HIV-positive women on existing contraceptive methods,
- To determine current contraceptive practices among HIV-positive women,
- To identify barriers to contraception use among HIV-positive women,
- To provide recommendations on how contraception uptake can be improved among HIV-positive women within the local community of Kasane.

1.7 Research methodology

- **Approach:** The qualitative approach was used in the information gathering process and in-depth understanding sought using the open-ended questions to explore participants' explicit opinions on factors that affect contraception uptake and the role of contraception in HIV prevention.
- **Sample:** A total of 25 women selected from Infectious Disease Care Clinic (IDCC) and Sexual and Reproductive Health (SRH) units were included in the study. The selection and recruitment of these participants has been done in a random manner to represent the population of the target population attending ART and Antenatal programs at Kasane Primary Hospital.
- **Interviews:** The face-to-face or One-to-one interview was conducted once the selected participant is in the consultation room during working hours that specific day or on any given day of the week at the participant's own convenient place and time. The interview approach is preferred because it promotes more privacy and confidentiality.
- **Descriptive statistics:** Excel Microsoft office was used for socio-demographic data analysis to determine frequencies and percentages of participants' characteristics and describe or summarize the research data. The author used different graphics and diagrams to communicate the results of this study.

1.8 Limitations of the study

The sample size was too small and more likely to miss the effect that may exist in the population. In addition, the data were self-reported and participants' family planning records were not used to verify the actual collection of contraceptives and self-reports do not always reflect individual intentions or behaviours. The Language barrier was also a limitation,

fieldwork was done in local language (Setswana) and translated by trained research assistants into the author's the second language, English.

1.9 Outline of chapters

The study chapters are presented as follow:

CHAPTER II: Literature Review: This chapter will cover what has been published in relation to contraception and factors affecting its uptake but also unintended pregnancies among HIV-positive women worldwide and the role of contraception and/or Family planning in HIV prevention. Literature review will highlight different views regarding this topic.

CHAPTER III: Research Methods: The third chapter will discuss study design and describe the participants 'sampling methods and research methods used to collect and analyze data. Research methods will also focus on the measurements instruments. Ethical considerations of this study will be discussed as well in this chapter.

CHAPTER IV: Reporting of the results: As stipulated, this chapter will cover the socio-demographic data of participants and proceed with qualitative data analyze. This chapter will also identify the main findings of the study.

CHAPTER V: Discussion, Conclusions and Recommendations: This chapter will cover the discussion on family planning / Contraception knowledge and current usage among HIV-positive women, their reproductive intention and factors affecting contraception uptake. but also the understanding of contraception as a HIV prevention strategy will be discussed. In addition, this chapter will highlight the findings from the current research project in relation to the knowledge and practices regarding contraception, and factors associated with low uptake of contraceptive methods among studied population. This chapter is also expected to make recommendations on how contraception uptake can be improved in this community to optimise HIV prevention and reduce somewhat the number of unintended pregnancies and STIs/HIV transmission.

1.10 Conclusion

This introductory chapter displayed the background information and introduced the overview of research methodology. Motivation for this study and outline of chapters were also presented . the next chapter will focus on the review of previous publications concerning this topic.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

A review of the published information in relation to the role of contraception and family planning practices in HIV prevention, factors affecting contraception uptake and rates of unintended pregnancies among HIV-positive women across the globe will be the focus of this chapter. Previous studies on this topic have identified community level factors of demographics and fertility norms, gender norms and inequalities, and health knowledge that remain significantly associated with contraceptive use, although the magnitude and direction of these community effects varied significantly across countries (Elfstrom & Stephenson, 2012); but also many challenges faced by HIV-positive women of reproductive age regarding the decision of having babies after knowing their HIV status (as cited in Kanyinda, 2010).

Proceedings of the pregnancy intentions of HIV-positive women had the discussion on preventing pregnancy highlighted ways in which the sexual and reproductive rights of HIV-positive women, including in relation to health care, family planning and delivery of contraceptives could be maximized with a particular emphasis on integrated or linked service delivery models (Harvard, 2010). It is indispensable to identify and understand factors that influence low uptake of contraception and subsequent unintended pregnancies among HIV-positive women of reproductive age group so that appropriate strategies can be put in place to fight this phenomenon and help these women plan their pregnancies, using contraception, to safeguard their own health, prevent both vertical and horizontal HIV transmission.

2.2 Overview of contraception as a HIV prevention

Sexual and reproductive health is an important component of human wellbeing including people living with HIV; childbearing has a significant value for many women worldwide. HIV transmission and other STIs take place in this very context of sexual and reproductive health.

Fertility regulation has the potential to help individuals and couples plan their pregnancies, determine the number of children they want and when they would like to have them. This implies that men and women in general, and those living with HIV in particular, have the right to be informed of existing fertility regulation methods and to access safe, effective,

affordable and acceptable methods of their choice. Family planning through the use of contraception remains the valid option to achieve this fertility regulation and can help prevent unintended pregnancies, thus reducing both vertical and horizontal HIV transmissions.

Despite the availability of contraceptive methods and their accessibility, many women of reproductive age living with the disease are still subject to unintended pregnancies, mainly because of low uptake of contraception. Preventing unintended pregnancies among HIV-positive women have a significant role in averting HIV-positive births and promotes maternal health.

Contraception has been largely overlooked as a HIV prevention strategy; however, it is the simple and low-cost act of helping HIV-positive women who do not want to have a child to avoid an unintended pregnancy (Cohen, 2008). There is a need to consider dual method protection promoting the use of any other contraceptive methods with condom since the use of barrier method (condom) in combination with other contraceptives maximizes contraceptive efficiency and reduces the risk of HIV transmission to sexual partners (Nattabi, Li, Thompson, Orach & Earnest, 2011). Women living with HIV need education on the appropriateness of each contraceptive method and encouraged to use dual protection since this option protection against both unintended pregnancy and STIs/HIV. A study by Kuyoh & Best (2001) reveals some women erroneously believe that a method effective in preventing pregnancy also will be effective in preventing disease transmission, HIV-infected women must understand which methods are appropriate for pregnancy versus disease prevention.

Given 7.8 million births are prevented by contraceptive use in sub-Saharan Africa in 2002 and a HIV prevalence of 7.4%, current contraceptive use in this region prevents an estimated 577 200 unintended pregnancies with subsequent unplanned births to HIV infected mothers. Assuming a 30% vertical transmission rate in the absence of antiretroviral prophylaxis, it is estimated current contraceptive use prevents over 173 000 unintended HIV infected infants each year in sub-Saharan Africa, or 474 HIV infected infants per day (Reynolds, Steiner & Cates, 2005). An additional 160,000 HIV positive births could be prevented by meeting the need for contraception among all women who do not wish to become pregnant in this region (UNAID, AIDSTAR-One & PEPFAR, 2005).

According to an USAID study, adding family planning services to prevention of mother-to-child transmission (PMTCT) programs could prevent almost twice the number of infections among children as PMTCT programs efforts alone without family planning (UNAIDS, 2005). The findings of the study conducted by Petruney, Harlan, Lanham & Robinson (2010) on increasing support for contraception as HIV prevention revealed preventing unintended pregnancies in HIV-infected women is a proven PMTCT approach and therefore an essential component of a comprehensive PMTCT program. These arguments are showing the benefits of contraception use in HIV-positive women. In addition, the costs of HIV infection averted with ART= \$609 USD compared to \$61 USD for contraception (UNAIDS, 2005).

Policy makers and health care providers need to understand contraception is a significant prevention strategy in the fight against HIV infection and contraception deserve particular attention as much as it is with others strategies. Contraception has a potential to avert HIV-positive births and it is also a significant tool that will help HIV-positive women fulfil their responsibility not transmitting the infection to HIV-negative men especially when condom is used. Furthermore, another analysis found HIV-positive births can be reduced more by increasing the contraceptive use at the same level of expenditure as provision of nevirapine (Reynolds et al., 2005).

According to IPPF (2000) contraception also can prevent horizontal HIV transmission has shown in the dual protection. The simultaneous use of an effective contraception method with consistent condom use, that has been advocated to reduce the risk of unplanned pregnancy, horizontal transmission of HIV to a non-infected partner, transmission of resistant virus to a partner with HIV infection, and the risk of acquisition of other STIs including high risk human papilloma virus (HPV) types. Contraception is therefore a key strategy in prevention of both vertical and horizontal transmissions of HIV infection. There is need for integration between family planning, PMTCT and HIV/AIDS services in order to strengthen prevention strategies. Another study estimated that more than 7,000 vertical HIV infections in Uganda are averted annually by current contraceptive use (Reynolds et al., 2008).

In another study on contraception choice for HIV-positive women conducted by Mitchell & Stephens (2004) when condoms are used as contraception, there is a high degree of protection against HIV sexual transmission (horizontal) and unintended pregnancies that is

provided by consistent correct condom use. But women living with HIV infection may feel unable to disclose their HIV status and negotiate condom use with sexual partner for fear of abandonment, domestic violence, loss of economic support, and social isolation.

FHI researchers estimate if the HIV-positive women in sub-Saharan Africa who are currently using modern contraceptive methods to prevent unintended pregnancy were not able to do so, the number of HIV-positive births in the region would be 31% higher than it is now (Cohen, 2008). Accordingly family planning enhances PMTCT supported by extensive research. Similarly, a recent analysis published found family planning was cost-effective for preventing HIV transmission and unintended pregnancies and would also reduce infant and maternal mortality and result in fewer orphans (Reynolds et al., 2008). The same study revealed the annual number of unintended HIV-positive births currently averted by contraceptive use ranges from 178 in Guyana to over 120 000 in South Africa. The minimum annual cost savings to prevent just the unwanted HIV positive births ranges from \$26 000 in Vietnam to over \$2.2 million in South Africa. The conclusion of this same study stipulated that contraception is already having an important effect on reducing the number of infant HIV infections. This contribution could be strengthened by additional efforts to provide contraception to HIV-infected women who do not wish to become pregnant.

The WHO Medical Eligibility Criteria notes the benefits of long-acting reversible methods of contraception generally outweigh the risks of pregnancies for HIV-positive women, as long as their infection remains well-controlled by antiretroviral therapy.

In addition to this, contraception has been called the best-kept secret of mother-to-child HIV transmission (Cates, 2004). The need for contraceptives is high among HIV-positive women, particularly those in sub-Saharan Africa. Meeting this need could improve HIV women's reproductive health, their autonomy, as well as preventing some cases of vertical transmission of HIV (Polis, 2010). Furthermore, preventing unintended pregnancies among women living with HIV constitutes the element 2 of World Health Organization recommended approach (WHO, 2010). The only way to prevent unintended pregnancies is the use of contraception whether barriers, hormonal (pills and injection), IUCD or any other method. Contraception is a beneficial HIV prevention. An estimated 220,000 HIV-positive births per year in countries hardest hit by HIV epidemic could have been prevented using contraception. As these

estimates are based on current (low) contraception use in developing countries and as several studies have shown that women who know they have HIV are less likely than other women to report wanting additional children, therefore, efforts to alleviate current unmet need for family planning (often high among HIV-infected women) could substantially increase the number of HIV-positive births averted (Petruney et al., 2010).

2.3 Factors affecting contraception uptake and rates of unintended pregnancies among HIV-positive women

The study conducted in the resource-poor, post-conflict region of Northern Uganda revealed low level of current family planning use despite a high level of knowledge about contraceptives methods. Only 38 % of participants were currently using any method. This study also revealed that fear of side effects, health concerns, gender- inequality, misinformation, reduction in sexual pleasure, spousal opposition to family planning methods, religious affiliation and negative perceptions were factors associated with low uptake of contraception (Nattabi et al., 2011). The findings of a study published by Oraka et al.(2012) on perspective of HIV-positive and negative women concerning pregnancy and contraception shows low level of contraception uptake. HIV-positive were less likely to report wanting additional children than HIV-negative women (8 vs. 49%, $P < 0.001$), and although a majority of women reported discussing family planning with a health worker during their last pregnancy (HIV-positive 79% vs. HIV-negative 69%, $P = 0.0$), modern family planning use remained low in both groups (HIV-positive 43% vs. HIV-negative 12%, $P < 0.001$). This study also identified some socio-demographic and service delivery-related as predictors of low use of contraception.

According to a study by Omo-Aghoja et al. (2009) on factors associated with the knowledge, practices and perceptions of contraception in rural southern Nigeria; the current contraception use was low with prevalence estimated at 29%, versus 71% of respondents who were not using any method of contraception. But the educational status significantly affected the occurrence of unwanted pregnancy and the contraceptive prevalence rate; the respondents with secondary and less level of education were more likely to have an unwanted pregnancy and also less likely to be using contraception as compared to those who attained tertiary level of education. They also found the fear of side effects (33.8%), lack of knowledge (16.6%) and lack of spousal consent (13.0%) were the leading reasons for present non-use of contraceptives. The main findings of the study conducted in Sudan revealed poor use of

family planning and estimated at 44.0% of these women who had previously or currently used one or more of the family planning methods. Factors such as husband objection (47.5%), religious belief (28.2%), desire for more babies (14.3%), fear of side effects (6.14%) were common reason for non use of family planning. This same study found couples' education were significantly associated with use of family planning in this setting (Ali, 2011).

Furthermore, a Randomized Controlled Trial to Promote Long-Term Contraceptive Use Among HIV-Serodiscordant and Concordant Positive Couples in Zambia shows the baseline contraceptive use was low with 21.5% (324) reported baseline use of a modern contraceptive method. They also concluded family planning and HIV prevention programs should integrate counselling on dual method use, combining condoms for HIV/STI prevention with a long-acting contraceptive for added protection against unplanned pregnancy (Stephenson et al., 2011). According to a study by Muyindike et al. (2012) 28 % of HIV positive women of reproductive age reported use of contraception at enrolment and the use of highly effective contraceptive methods was also low (18%). They also found dual methods of contraception were rarely used; therefore, contraception programs should also educate clients about the value of dual methods in order to prevent HIV/STI transmission to sexual partners as well as to prevent unintended pregnancies. Low usage of contraceptive method was significantly associated with lower education, being single and low monthly income.

In a study conducted in Kericho, Kenya on factors influencing contraception choice and discontinuation. The predominant reason stated for changing methods or discontinuing a method was physical side effects, but also partners refusal was found to be a contributing factor. Many participants perceived their male partners were unsupportive of contraceptive use because the methods reduced the pleasure experienced during sex due to decreased sensation (in the case of condoms), decreased female libido (in the case of hormonal contraceptives), and odd sensations during sex (in the case of IUDs) (Imbuki et al., 2010).

The findings of a prospective study on of median follow up time of 2.4 years after starting ART to assess pregnancy outcomes among women on antiretroviral therapy in rural Uganda revealed an increased pregnancy incidence from 3.46 per 100 women-years (WY) in the first quarter to 11.71/ 100 WY at the fourth quarter ($p < 0.0001$). Although 93% to 97% of all women reported not wanting any more children at any time, only 14% of women used permanent or semi-permanent family planning methods and fewer than 8% used dual

contraception by their second year on ART. This study concluded most pregnancies were unintended and very few women were using semi-permanent or permanent family planning methods and found young age, being unmarried or living with a partner and inconsistent condom use as independent predictors of conception (Homsy et al.,2009).

A study by Srikanthan & Reid (2008) found religious and cultural factors to have the potential in influencing the acceptance and use of contraception by couples from different religious backgrounds in very distinct ways. Many religions are against unnatural means of contraception. Cultural factors are equally important in couples' decisions about family size and contraception. Similarly, Kabir et al. (2004) shows about 65% of men who participated in the study on the role of men in contraceptive decision-making in Fanshekara Village, Northern Nigeria disapproved the very concept of contraception. Disapproval was higher among those with low educational attainment and affected contraception uptake. Reasons for the men's disapproval were mainly based on religious and cultural factors. More than two-thirds (68%) of the men felt that family size determination and contraceptive decision-making was entirely their responsibility, while 73% had never discussed these. The same study found positive attitude in the husband was significantly associated with current use of contraception ($\chi^2 = 5.32$; $df = 1$, $p < 0.05$). Another study also revealed partner opposition was found to account for as much as 20 percent of unmet need reported by women and appears to reduce contraception prevalence by roughly one-fourth for both men and women. This study also shows modern method reported by women who want to stop bearing children declines by more than half from 26 percent to 11 percent when their partners disagree (Wolff et al., 2000).

Although women living with HIV make up 59 % of all adults living with HIV in sub-Saharan Africa, there is still limited evidence of extent or type of contraceptive use by them (Delvaux & No"stlinger, 2007). At 17th Conference on Retroviruses and Opportunistic Infections (CROI) it was shown hormonal contraceptive methods are safe for women with HIV, but usage Rates low (Boughton, 2010).

In the light of different cultures and contraceptive practices, methods providing protection from both unintended pregnancy and sexually transmitted disease (STD) should ideally be available (Cates & Steiner, 2002). A survey study conducted (Rossella, 2006) in 14 countries

among 7000 women irrespective of their HIV status between 14-40 years showed knowledge gap in FP methods restricts women's contraceptive choices and hence use, and that women fail to take advantage of new contraceptive methods due to lack of knowledge and stay with the familiar options.

Unintended pregnancies has been considered as consequences of unmet need for family planning in majority of cases (Ashford, 2003). In a study conducted by Igwegbe et al.(2009), about 76 percent of unintended pregnancies were due to non-use of contraceptives despite high level of knowledge about family planning (95.5%) and high prevalence of modern contraception (73.3%) among respondents.

Another study conducted in Zimbabwe on subsequent pregnancies among HIV-positive women identified in PMTCT programs revealed that increasing number of HIV-positive mothers who were aware of their status prior to pregnancy was associated with unplanned pregnancies. These (unplanned pregnancies) resulted from improved health status of the women on antiretroviral (ARVs) drugs, patients not aware of returned fertility and also inadequate family planning counselling (Mukotekwa, 2009).

According to a 2007 Guttmacher Institute study, one in four married women in sub-Saharan Africa is sexually active and does not want to have a child or another child in the next two years, but is not using any method of contraception. As a result, unintended births are common, and occur in the very countries that are a focus of PEPFAR—countries in which HIV prevalence is high and 60% of all adults living with HIV are women; and it is also shown in this study that high HIV/AIDS rates coexist with a high unmet need for contraceptive services but also high incidence of unplanned births and unintended pregnancies (Cohen, 2008).

Schwartz et al (2012) in their prospective study on incidence of unplanned pregnancies after antiretroviral therapy initiation conducted in Johannesburg, South Africa revealed that out of 170 pregnancies were detected, 105 (62%) were unplanned. Unmet need for contraception was 50% higher in women initiating ART in the past year as compared to women on ART.1 year (prevalence ratio 1.5 [95% CI:1.1–2.0]); by two years post-ART initiation, nearly one quarter of women had at least one unplanned pregnancy. Cumulative incidence of pregnancy

was equally high among recent ART initiators and ART experienced participants: 23.9% [95% CI: 16.4–34.1], 15.9% [12.0–20.8], and 21.0% [16.8–26.1] for women on ART 0–1 yr, 1 yr–2 yrs, and >2 yrs respectively (log rank, $p = 0.54$). They concluded that the rates of unintended pregnancies among women on ART are high, including women recently initiating ART with lower CD4 counts and higher viral loads. This study also compared incidence of unplanned pregnancy according to baseline unmet need for contraception and found that women with a baseline unmet need for reliable contraception had a higher incidence of unplanned pregnancy during study follow-up as compared to women who reported use of a reliable contraceptive (log-rank $p, 0.01$). When considering time-varying contraceptive use and incidence of unplanned pregnancy, women reporting condom use alone to prevent pregnancy had similar cumulative incidence rates of unplanned pregnancies to women reporting no reliable method use. Furthermore, this study shows that side effects of hormonal contraceptive methods constitute barriers to its uptake.

A retrospective study conducted on high prevalence of unintended pregnancies in HIV-positive women of reproductive age in Ontario, Canada found that of the 195 participants who were pregnant after their HIV diagnosis, 106 (54%) of their last pregnancies were unintended and of those who were only pregnant before being diagnosed with HIV (216 participants), 124 (57%) of their last pregnancies were unintended. It confirms that unintended pregnancy is also a problem among HIV-positive women in high-income countries. This study also revealed that other significant correlates of unintended pregnancies were lower age, being unmarried, lower income and less education (with those having only a high school education being the group with the highest unintended pregnancy rate) (Loutfy et al., 2012). Contrarily to the phenomenon of unintended pregnancies, some women intended to become pregnant and desire children after knowing their Seropositive HIV status, thus leading to low uptake of family planning and undermining HIV prevention. A study conducted by Wanyenze et al. (2011) on uptake of FP and unplanned pregnancies among HIV-infected individuals shows that about 20% (180) of the respondents who already had children desired having more children. A slightly larger proportion of men (23%; 85) than women (19%; 95) desired more children. Half of the women (182) and 34% (100) of the men said their partners desired having more children. This study also found that the current use of modern contraceptive methods was associated with religious affiliation and lowest among Catholics (64%) and those who did not discuss the number and timing of children with their

sexual partners (58%), and there was no significant association between desire to have children by respondent or sexual partner, number of live children and current use of FP. Furthermore, the desire for children has been reported among HIV-positive individuals in another study conducted in medical care setting. The results of this study has found about 28-29% of HIV-infected men and women receiving medical care in the United States desired children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in the future. The proportion of HIV-infected women desiring a child in the future is somewhat lower than the overall proportion of U.S. women who desire a child. The fertility desires of HIV-infected individuals do not always agree with those of their partners: As many as 20% of HIV-positive men who desire children have a partner who does not. The fact that many HIV-infected adults desire and expect to have children has important implications for the prevention of vertical and heterosexual transmission of HIV, the need for counselling to facilitate informed decision-making about childbearing and childrearing, and the future demand for social services for children born to infected parents (Chen et al. ,2001).

Most HIV-infected women do not know their HIV status before they conceive. Some may only find it out when they receive antenatal services, if testing is available. Still, other HIV-infected women know their HIV status before they conceive. Sixteen of fifty two HIV-positive women interviewed in Zimbabwe, for example, became pregnant after their diagnosis, with seven of the Sixteen pregnancies desired (Feldman, Manchester & Maposhere, 2000).

According to the current consensus of opinion, HIV-infected women and women at risk of HIV infection can use all available contraceptive methods . However, for optimal protection against both unintended pregnancies and Sexually Transmitted infections including HIV, one-method is recommended: consistent use of condom only or two-method (dual contraception): condom plus another method for HIV-positive women (Cates & Steiner, 2002).

2.4 Studies conducted in Botswana

The findings of the study conducted in Serowe, Botswana on level of knowledge of HIV prevention from mother-to-child transmission of HIV and describe the practices of family

planning showed that although most participants seemed to know the contraceptive methods and understood the importance of these methods, only four out of 26 participants were using dual protection, the method which prevents both pregnancy and sexually transmitted infections (STIs and HIV). The responses from participants showed that they have knowledge about family planning through PMTCT counselling. However, family planning use was still low among HIV-positive women. This study also revealed the significance of unintended pregnancy with about 42.3 % of participants reporting their current pregnancy as unplanned. and a number of participants (15.4%) indicated they became pregnant because their partners wanted a child (Kanyinda, 2010).

In Letlhakeng, one of the sub-district of Botswana, a study was conducted on factors associated with pregnancies among HIV-positive women in prevention of Mother-to-child transmission program. The study enrolled 35 HIV-positive women pregnant. The use of condoms, the only method that prevent both unintended pregnancies and STIs/HIV, was low among participants and was associated with pregnancies. Of these 35 respondents, Fifty-six per cent of the participants had used condoms sometimes, 31% did not use condoms and about 13% always used condoms. Seventy per cent of non-condom users and 39% of those who sometimes used condoms had subsequent pregnancies. The results show that there is a significant association ($p < 0.05$) between using condoms and pregnancy (Bah`him et al., 2010). There is low uptake of contraception among women living with HIV and the use of condoms is inconsistent. Thus leading to subsequent pregnancies.

2.5 Conclusion

This chapter explored the previous research findings on overview of contraception as a HIV prevention, factors affecting contraceptive uptake and unplanned pregnancies. As the desire for childbearing is part of sexual life, people living with HIV need to understand the importance of family planning in preventing the disease. The multifactorial pressure experienced by women in general, and those living with HIV in particular, makes the use of contraception a challenge of their sexual and reproductive life. Many researchers noted that unintended pregnancies were the results of unmet need for family planning and use of contraception has the potential to reduce HIV transmission. In addition, counselling that enable and facilitate HIV-positive women to take informed decisions about childbearing and enhance understanding of the role of contraception in HIV prevention is crucial in reducing

the risks associated with unintended pregnancies. The integrated approach is needed to conciliate HIV, contraception and childbearing and reduce the disease transmission.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will focus on the study design, population/universe, sampling methods and sample size, data collection methods, measuring instruments and ethical considerations. The research will be conducted against the background of the formulated problem statement: What are the factors that contribute to the low uptake of contraceptive methods among HIV-positive women in Kasane?

The aim of the study was to investigate and identify the factors that contribute to the low uptake of contraceptive methods among HIV-positive women of reproductive age group (15-49 years) at Kasane Primary Hospital in order to improve contraception uptake among this category of population and in so doing, to prevent unintended pregnancies, other Sexually Transmitted Infections (STIs) and avoid HIV-positive births in the local community of Kasane. Against this background the objectives were:

- To identify the current knowledge of HIV-positive women on existing contraceptive methods,
- To determine current contraceptive practices among HIV-positive women,
- To identify barriers to contraception use among HIV-positive women,
- To provide recommendations on how contraception uptake can be improved among HIV-positive women within the local community of Kasane.

3.2 Study design

A cross-sectional descriptive survey method using qualitative inquiry was used to explore HIV-positive women's motivations for low uptake of contraception with subsequent unintended pregnancies despite knowing their HIV status. This is because it is indispensable to explore the in-depth reasons why a HIV prevention strategy such as contraception is poorly sought by women living with the disease. This cross-sectional design was chosen because the data will be collected from the research participants during a single, relatively brief time period. The data was collected only once and typically in multiple types of people (multiple age groups, different socioeconomic classes, and with different accomplishments and abilities) (Christensen, Johnson & Turner, 2011). This study has not been longitudinal in nature.

Aimed at investigating and identifying the factors contributing to low uptake of contraceptive methods among HIV-positive women at Kasane Primary Hospital, there is need to get a good understanding of this phenomenon. The qualitative method provides an added level of understanding as compared to a quantitative method. Creswell and Patton (as cited in Christensen, Johnson & Turner, 2011) recommend the qualitative method since they feel research aimed at collecting only quantitative data often provides an incomplete analysis or picture of the phenomenon, event or situation being investigated and that the addition of qualitative data provides an added level of understanding.

In addition, qualitative research method tends to be more useful for understanding and describing local situations and for theory generation (Christensen, Johnson & Turner, 2011). The third component of qualitative research is conducted in the field or in the person's natural setting and surroundings such as therapy setting (Christensen, Johnson & Turner, 2011). Hence, the qualitative data collection method was found to be more appropriate and used for this study.

A qualitative research study aims to collect some information to answer a research question. The information consist of data such as statements made by a person during an interview, written records, pictures, clothing, or observed behaviour (Christensen, Johnson & Turner, 2011). Denzin & Lincoln (as cited in Christensen, Johnson & Turner, 2011) define qualitative research method as an interpretive research approach that relies on multiple types of subjective data and investigates people in particular situations in their natural environment. Interviews will collect subjective perspectives data for interpretive purpose; corresponding to the first component of qualitative method. Interviews are generally preferred because the researcher has more control over the data collection and have the advantages of allowing the interviewer to clear up any ambiguities in the question asked and to probe for further clarification of responses if the interviewee provides an inadequate answer; there is a higher completion rate and more complete respondent information. The disadvantages of this method are related to high costs (most expensive method) and the possibility that the interviewer might bias the responses (Christensen, Johnson & Turner, 2011). However, the advantages of this data collection method seem to outweigh its disadvantages. Meeting with the objectives of this study, interviews were the data collection method chosen and a related

guide was designed to collect data in IDCC and SRH Units at Kasane Primary Hospital. At this centre, there is a possibility to interact with HIV-positive women on a daily basis.

3.3 Population/Universe

The study was conducted in Kasane Primary Hospital's IDCC and SRH units in Kasane. These two units provide respectively antiretroviral therapy, antenatal care and PMTCT (Triple prophylaxis) services weekly from Monday to Friday starting from 07:30 am up to 04:30 pm. Highly Active Antiretroviral Therapy (HAART) and PMTCT (Triple prophylaxis) services are conjointly provided in IDCC. In average 40 to 50 clients are seen daily (including first visit and re-visits) in IDCC whereas 15-20 clients are seen in SRH.

3.4 Sampling methods

A systematic sampling technique was used to select the participants who are essentially HIV-positive women of reproductive age group (15-49 years) enrolled in ART program because they are appropriate to respond to the questions on the phenomenon of low uptake of contraception and subsequent unintended pregnancies. Before sampling, the study topic was introduced as part of a morning talk to all HIV-positive clients attending the antiretroviral therapy (ART) Clinic in IDCC and pregnant women, waiting for prevention of mother-to-child transmission of HIV with Triple prophylaxis, at the antenatal clinic (ANC) that specific day.

Out of 4,071 patients of all sexes and ages enrolled in our IDCC; 2,586 represent the population of female patients including both reproductive and non-reproductive. The production of the list of target population from data base is time consuming and demands careful screening from the general population of patients enrolled in IDCC. Since simple random sampling technique requires the process of generating the list of target population (sampling frame) from the patient data base. The selection of the sample (25 participants) will possibly involve a large sampling interval which might need a significant period of time to complete the data collection, unless prospective participants are contacted for interviews outside of their routine clinic visits. It was decided to select participants attending scheduled clinic visits until the required number is reached since this is conducive with daily activities and congruent with clients hospital attendance. Given the limitations to have only HIV positive women of reproductive age group as clients in IDCC and the time constraint to

follow the classic random sampling method as proposed by Christensen, Johnson & Turner (2011) the systematic sampling technique was used for a random selection of participants. In fact, every fifth HIV-positive woman of the target population was randomly selected as she enters the consultation room individually to participate in the study. This count systematically skipped people who do not fulfil the inclusion criteria. If the 5th client did not meet the criteria, the next woman was considered. Only women who consented to participate in the study were selected. After the participant selection, the interview was conducted once in the consultation room during working hours or on any given day of the week at the participant convenient place and time. A total of 25 women selected from IDCC and SRH were included in the study.

3.5 Data collection

The targeted group was HIV-positive women of reproductive age between (15 – 49 years) pregnant or not and whether such pregnancy has been intended or unintended enrolled in ART Clinic and SRH Units. After being selected as participant using systematic sampling technique, one-to-one interviews was conducted to collect data. A maximum of 25 participants selected from these women were interviewed in order to gather information in order to identify their current knowledge on existing contraception methods and determine the current contraceptive practices and finally identify factors that hinder contraception use among this category of people before making any recommendation on how contraception uptake can be improved among HIV-positive women. These clients attend the ART program on daily basis in both IDCC where they are provided with HAART and the SRH units where they receive Triple prophylaxis depending on their baseline CD4 count cells and the initial therapeutic purpose. Triple prophylaxis is one of the current PMTCT intervention approaches combining three antiretroviral (ARVs) drugs for such prevention. One-to-one interviews are preferred because it is thought that an individual alone will feel free to give more information about her life or her behaviour than in a focus group. It is considered one-to-one interview promote more privacy and confidentiality than focus group interviews. An interview guide was designed in both English and Setswana. The interviews were conducted in the local language (Setswana) by the trained research assistants. Each interview was conducted for approximately 30 to 45 minutes. The responses were recorded and reviewed in the field for transparency and completeness and where applicable, the researcher and research assistants returned to the households to complete or clarify interviews.

3.6 Measuring instruments

The interview guide was designed to collect data. The information to be gathered were in relation with socio-demographic data, knowledge and education on contraception, access and affordability to sexual and reproductive health services for PLWHA, contraception uptake and factors that may impede the use of contraceptive methods. But also information on childbearing intentions, understanding of contraception as a HIV prevention strategy for women living with HIV were gathered as well.

3.7 Ethical aspects

The study involved individuals; therefore ethical considerations were carefully taken in account to avoid the breach of confidentiality. The study was conducted in due respect of constitutional human rights and dignity of the participants to this research project. The study dealt with sensitive issue of contraception among people living with HIV. Any client (prospective participant) had the right to refuse participation to this study. In addition, co-investigators ensured the rights of participants (HIV-positive women of reproductive age group) and all people living with HIV/AIDS (PLWHA) are maintained throughout the period of research and even thereafter. In accordance with the requirements of human subject research, prior to beginning this study, the research proposal was submitted for approval to the Research and Ethics Committee of Stellenbosch University and the Health Research Development Division (HRDD) at the Ministry of Health of Botswana. Permission from local authorities (workplace) was sought as well.

All participants were informed about the purpose of the study and were given to choice to participate. Supportive counselling was provided to participants in order to mitigate the ethical risk of this study. The respondents' participation was volunteered and records of provided data were anonymous. Participants were also ensured that all data collected would be treated with confidentiality and all the records would be kept safe and secured. Study data collection instruments will not record the names of the participants in the study. Data collected electronically will be stored on a password-protected personal computer and network drives. It will only be accessed by the researcher. Hard copies of questionnaires will be stored in locked cupboards at the research's office when not in use for data entry or analysis. The data will be destroyed after three (3) years. A consultation room or participant

household was provided for face-to-face interviews. Only the researcher, research assistants and the participant were present.

Participants were given the choice to withdraw at any stage of the study without fear of being victimized or intimidated. Participant's written consent was sought and only participants who consented to participate were selected for the study. Upon completion of the study, the hard copy and electronic copy of the outcome (results) will be made available to the Africa Centre for HIV/AIDS Management as the institution supervising the research. A copy of this study will also be submitted to both Research and Ethics Committee University of Stellenbosch and Botswana Health Research Development Division. It will be available in all health facilities in Chobe District Health Management Team (DHMT). The research proposal has been submitted to the ethics committee for clearance and permission to conduct this study was sought from both HRDD in the Ministry of Health and Chobe DHMT local authorities. Conducted at the workplace, the process of data collection through interviews took place every day during working hours preferably in the morning when the participant (Client) was still fresh and in the favourable mood to respond and participate in this critical activity of this research study. But the interviews were also done at a convenient place and time chosen by a participant.

3.8 Conclusion

This chapter concentrated on research methodology within the framework of the proposed study. A cross-sectional survey as research design was selected and a systematic sampling technique was used to identify participants. The rationale for the cross-sectional design is found in the nature of this study in which the data will be collected from the research participants during a single, relatively brief time period. Whereas, the motif for systematic sampling technique was random selection of participants in special circumstances that required congruency between investigators daily activities and prospective participants routine clinic visits. The data collected using the described methods will be analysed and discussed in the next chapter.

CHAPTER IV

REPORTING OF RESULTS

4.1 Introduction

The this chapter four preseneted the results to identify the main findings of the study. The analysis of results was done manually using descriptive statistics for qualitative data and Excel Microsoft Office Software was used to determine the frequency distribution and percentage of each socio-demographic characteristic of participants.

4.2 Data organization

Characteristics of participants assessed include: age, marital status, living together with a partner or separated, employment, religious affiliation; income and educational level. The second part covers the qualitative data as follows: Contraception and HIV (access - affordability , knowledge-education on contraception, contraception uptake, factors affecting its uptake); Contraception - Childbearing Intentions and HIV (Pregnancy Intention, Partners Expectations about Childbearing, Fertility Preference for HIV-positive women), Risks Associated with conception and HIV , Understanding the role of Contraception as a HIV Prevention Strategy. Statements from individual participants and their comments were recorded anonymously according to their opinions. No name was used, expression such as one participant, some participants and majority of participants were used to label transcripts from participant(s).

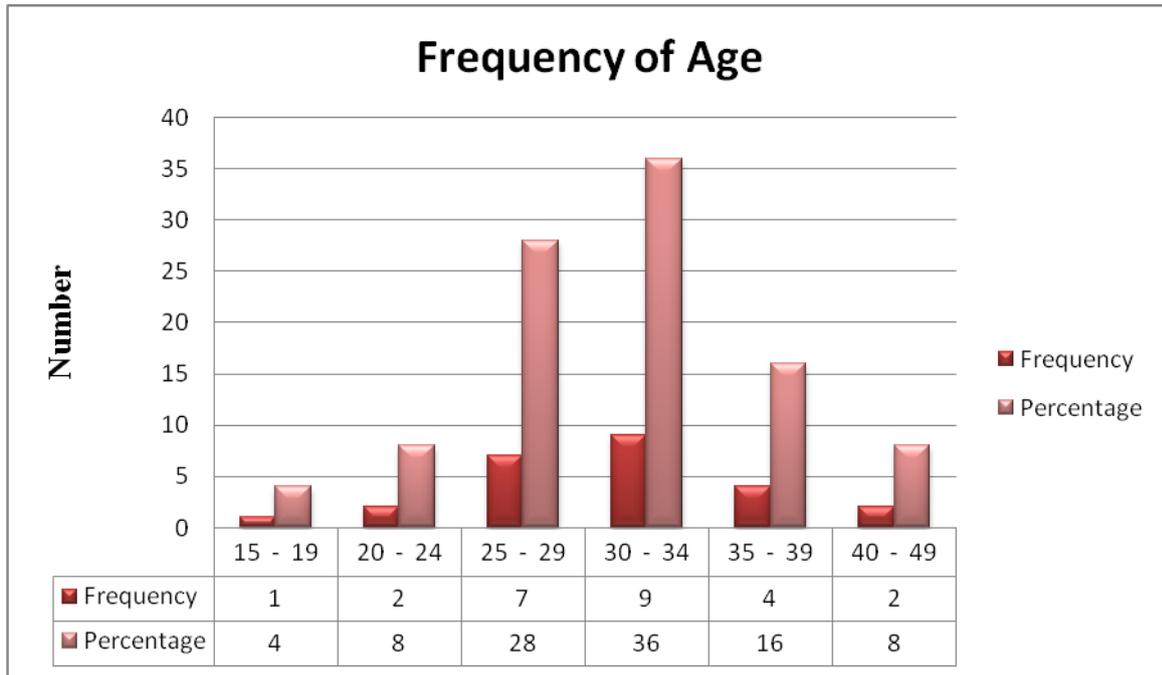
4.3 Socio-demographic characteristics of participants

The characteristics of participants are presented in the following order:

4.3.1 Age

Out of the total number of (N = 25) participants the minimum age was 17 years and maximum age 42 years. Figure 4.1 shows the majority of participants were aged between 30 and 34 years old (representing 36 % of the sample), followed by women aged 25 to 29 years old (28 %). The lowest frequency of participants was found among the category of young women aged between 15 to 19 years old (4%). Women aged 20 and 24 years and those aged between 40 and 49 years had equal frequency and represented 8 % each. The average age of participants was 29 years old (figure 4.1).

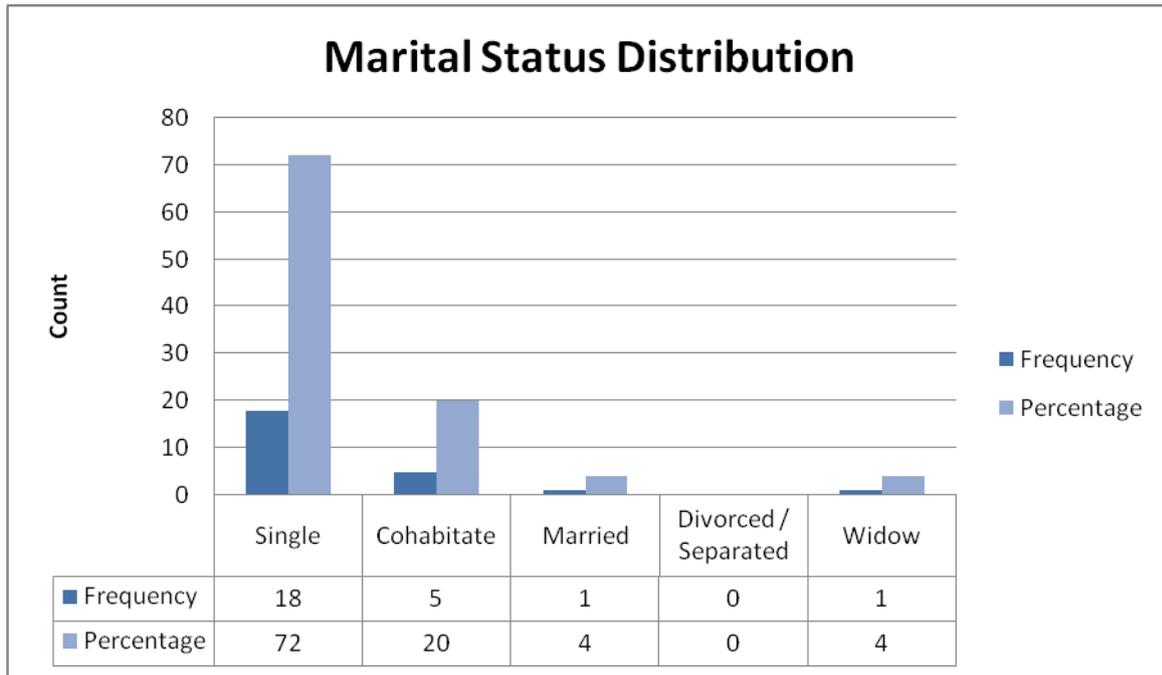
Figure 4.1
Frequency distribution of participants by age (years)



4.3.2 Marital status

The frequency distribution of participants by marital status indicated among the 25 participants, singles are 18 (72%) as the most frequent category, followed by the cohabitation phenomenon 5 (20%), whereas 1 (4%) was married and another being a widow 1 (4%). None (0%) was divorced / separated (figure 4.2).

Figure 4.2
Frequency distribution of participants by marital status

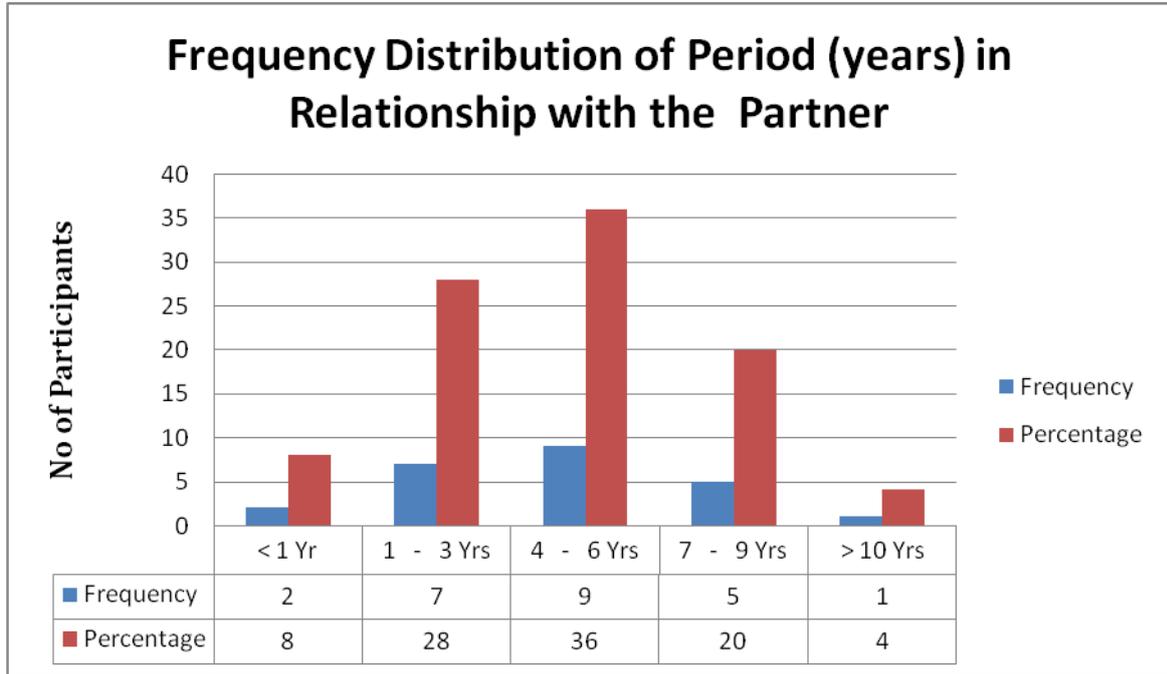


4.3.3 Period in relationship with the partner

The frequency distribution of participants by period in relationship indicated among the 25 participants, those who spend (4 – 6) years were 9 (36%), followed by the category of (1 – 3) years 7 (28%), the category of (7 – 9) years had 5 (20%) and One (4%) spend more than 10 years whereas 2 (8%) spend less than a year (figure 4.3).

Figure 4.3

Frequency Distribution of participants by period in relationship with the partners

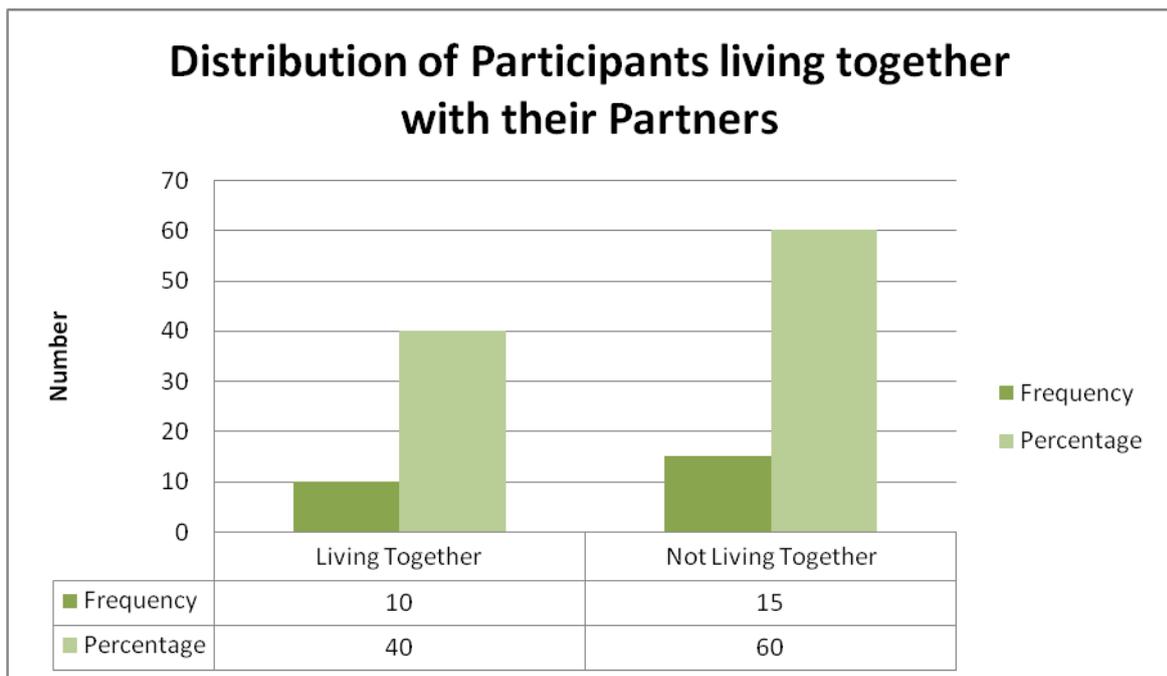


4.3.4 Living together with the partner

Out of the 25 participants, 15 (60%) were not living together with their partners (the large proportion) and 10 (40%) live together with their partners (figure 4.4).

Figure 4.4

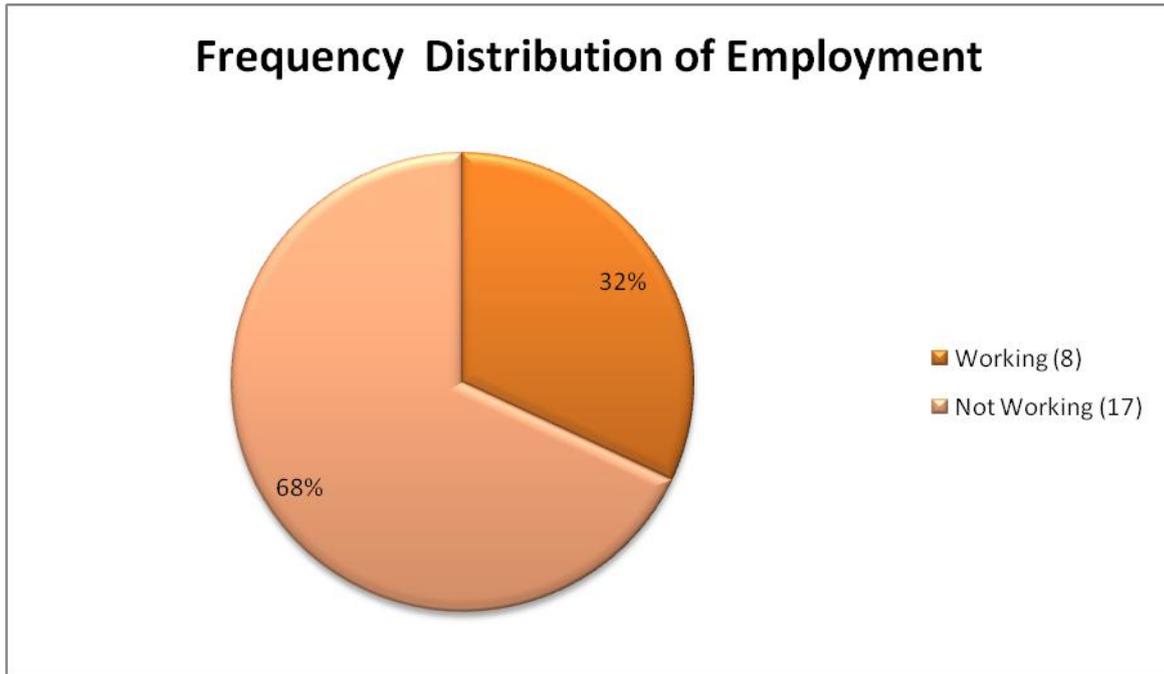
Number of participants living together with their partners



4.3.5 Employment

Of the 25 participants, 17 (68%) were working versus 8 (32%) those not working as shown in figure 4.5.

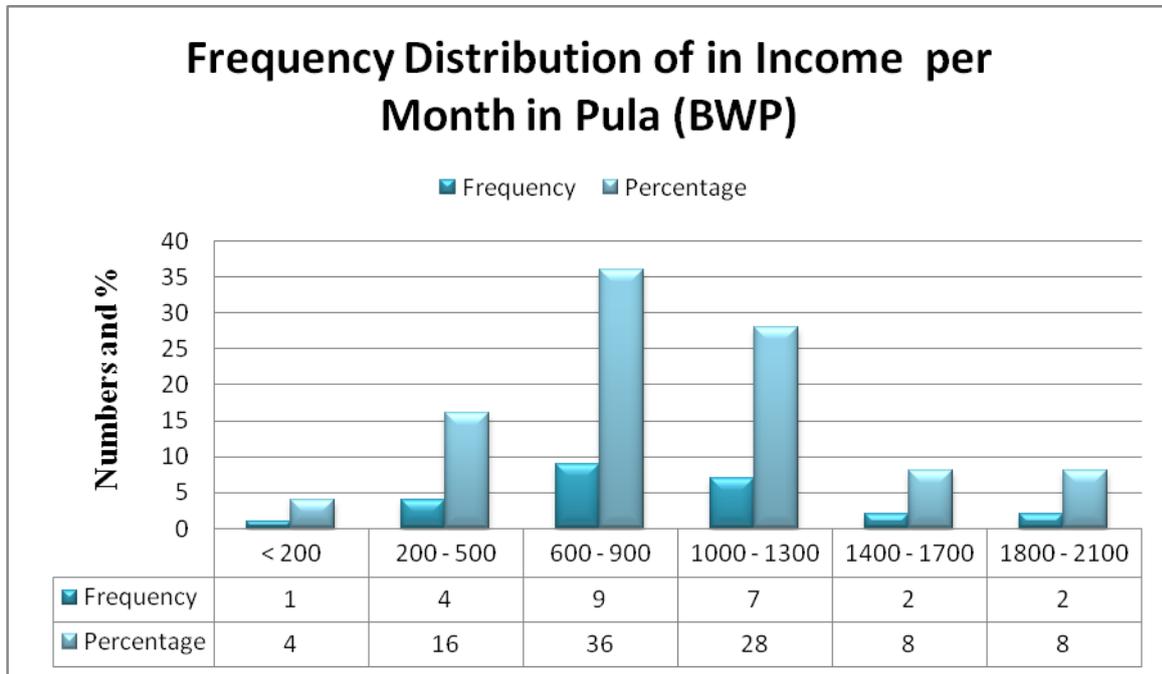
Figure 4.5
Frequency distribution of participants by employment



4.3.6 Income distribution

Figure 4.6 show the majority of participants 9 (36%) have 600 to 900 BWP per month as income; 7 (28%) out of 25 participants earn between 1000 and 1300 BWP. Two participants have a monthly income between 1400 and 1700 BWP while two others earn above 1800 BWP. Only one participant was earning less than 200 BWP per month. The highest income recorded was 2100 BWP whereas the lowest 150 BWP.

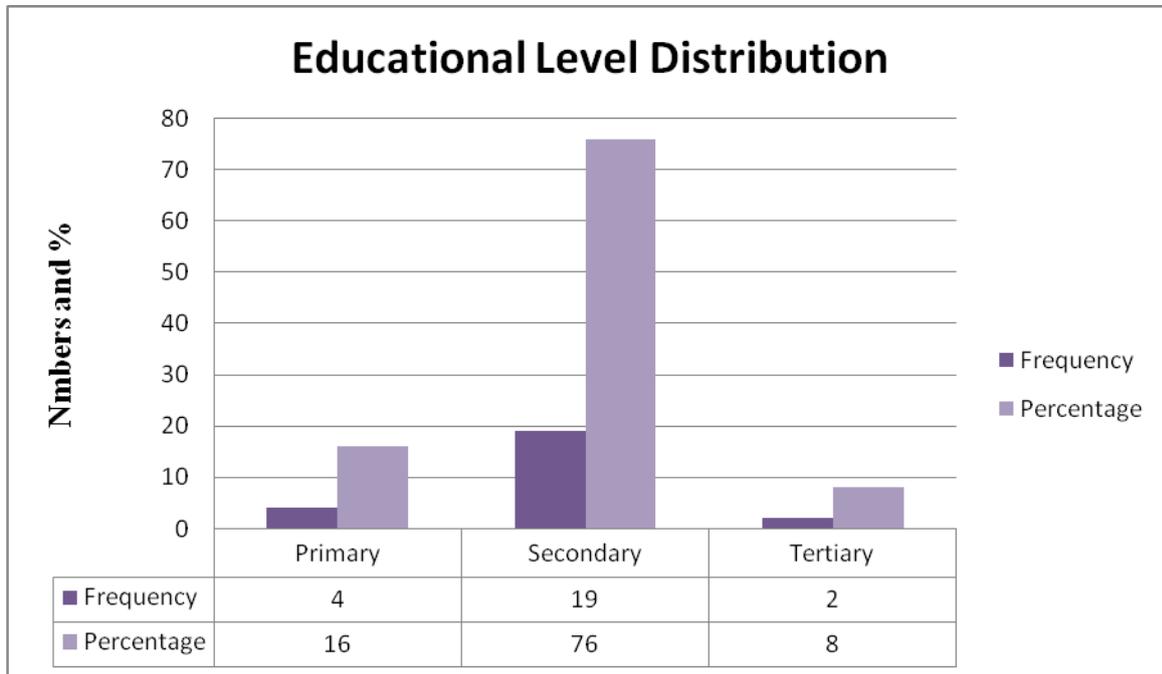
Figure 4.6
Frequency Distribution of Participants by Income



4.3.7 Education level distribution

Out of (N= 25) participants 19 (76%) attended secondary school and 4 (16 %) have primary level of education. Very few attended the tertiary education and were represented by 2 (8%) participants (figure 4.7).

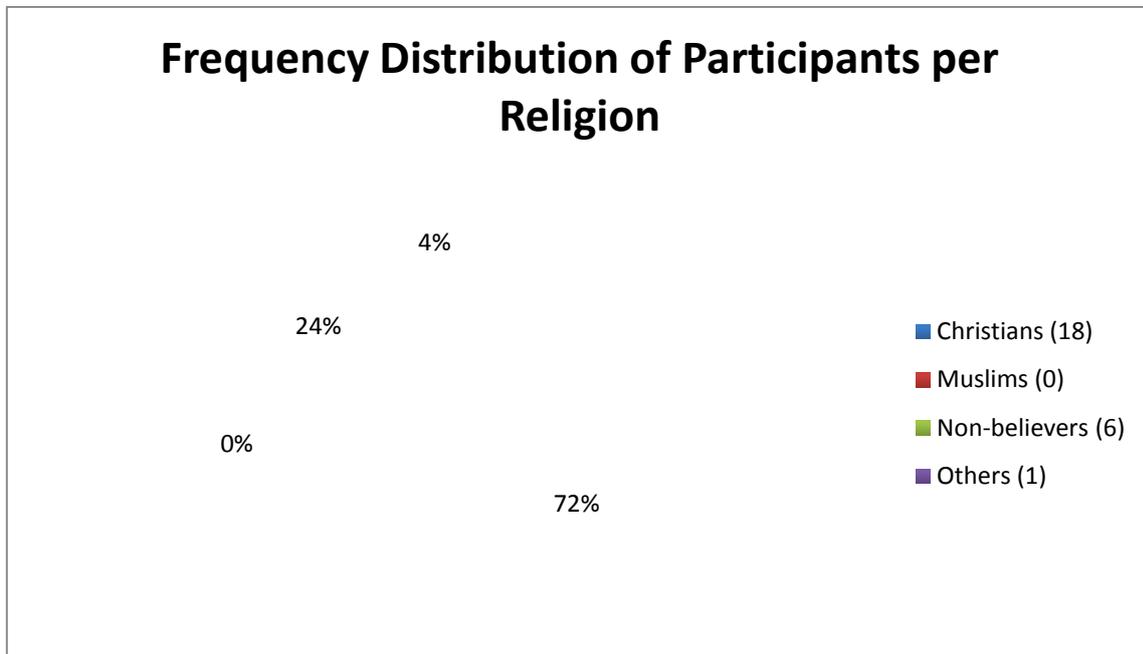
Figure 4.7
Frequency Distribution of participants by the level of education



4.3.8 Religious believe

The majority of participants were Christians 18 (72%); followed by non-beliers 6 (24%). None (0%) of the 25 participants is Muslim; one (4%) attends traditional Church. Christians in this study included both catholic and protestant believers. Whereas ‘others’ included Pentecostals, Seventh Day Adventists (SDA), Jehovah’s witnesses and Traditional Churches (figure 4.8).

Figure 4.8
Frequency Distribution of Participants per religious affiliation



4.4 Contraception / FP and HIV

Information in relation to access and affordability, knowledge and education on contraception, its uptake, and factors that contribute to the low uptake of contraception among studied population are presented under this section.

4.4.1 Access and affordability of contraception to HIV-positive women

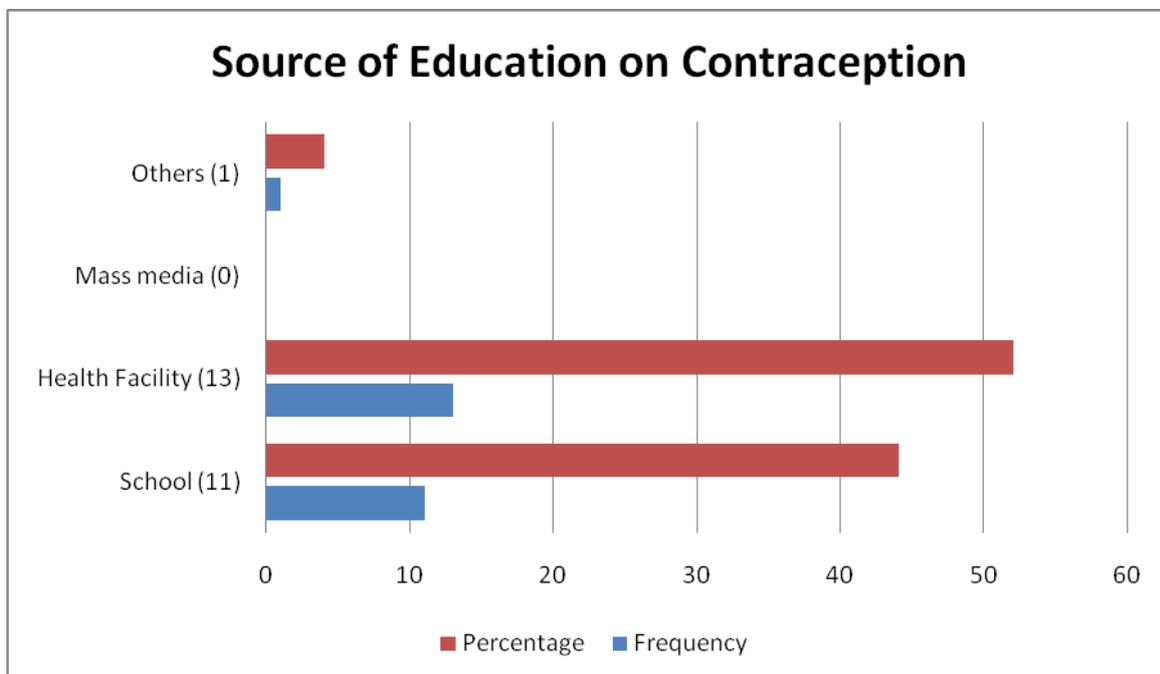
All the participants 25 (100%) admitted that access to contraception / FP was the same as accessing any other services in the health care setting. When asked the question: Do you think sexual and reproductive health services such as family planning and/or contraception are accessible to HIV-positive women in KPH? some participants responded: “ *We do not feel discriminated against by health care workers since they encourage us to use contraception at each visit at the clinic*” others reported “ *these contraception are available for everyone who needs to use them*”. To the question: Are these services affordable in this environment? Most of them responded: “ *I think they are affordable because they are almost free of charge just like any other health services in the government hospitals*”.

4.4.2 Knowledge and education on contraception

All the 25 participants (100%) had some knowledge about family planning. They reported different sources of education on contraception. The main source of education on contraception is a health facility with 13 (52%), followed by school 11 (44%). Only one (4%) participant knew about contraception through a friend. None of the participants had thought about contraception by mass media or any other source of education (figure 4.9).

Figure 4.9

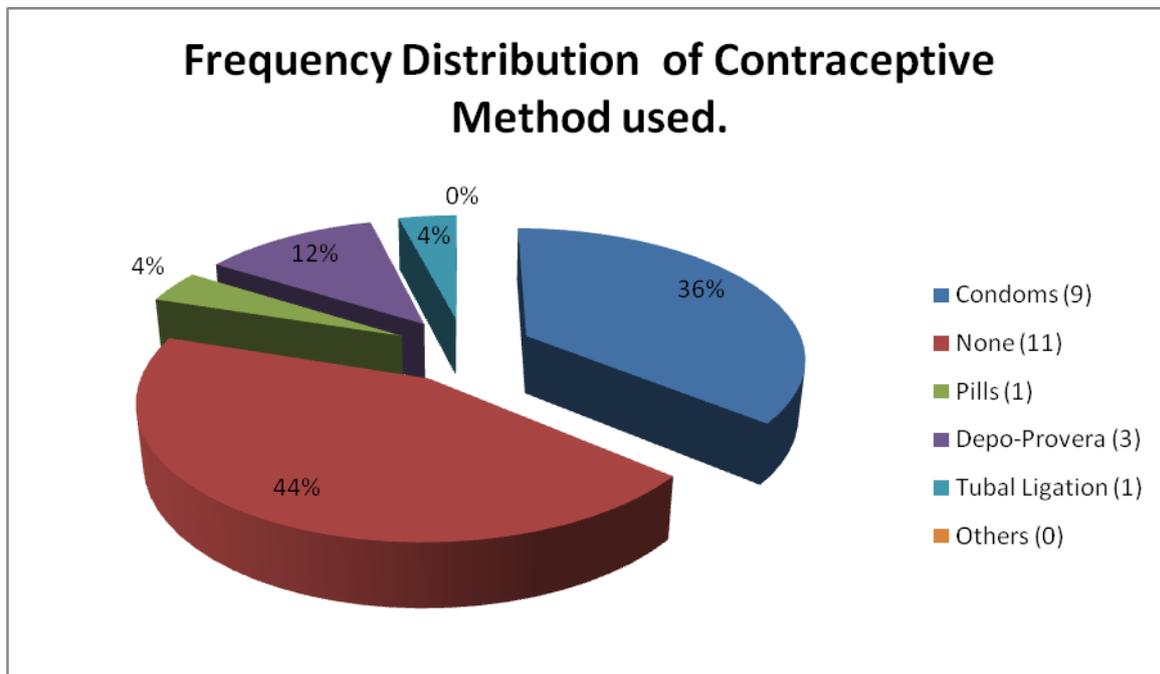
Source of education on contraception



4.4.3 Contraception uptake among HIV-positive women

Figure 4.10 shows out of (N=25), Eleven (44%) participants were not using any contraceptive method. Three (12%) used Depo-Provera/Injections; One (4%) participant was using pills and the other one (4%) used Tubal Ligation. Nine (36%) participants were using condoms (male) as contraceptive method. The other methods such as (IUCD, Implants, diaphragms etc) were not reported by the respondents.

Figure 4.10
Frequency Distribution of Contraceptive Method used.



4.4.4 Factors affecting contraception uptake

Of the 25 participants, 7 (28%) reported partner refusal as factor that affects contraception uptake. [two of these participants were occasionally using condoms as contraceptive method, and five not using any method], male partners have high expectations about childbearing and generally dislike any idea of contraception. some of these respondents made the following statement: “ *When I told my partner that the nurse advised me to go for family planning*”; “ *he said if you are planning to stop conceiving, I will get another woman who will give me more children*” . Another woman said, “*my partner does not like condoms during sex because he keeps saying that it affects his sexual power (performance) and reduces pleasure and wants it (intercourse) flesh-to-flesh*” this woman also added that: “*condoms usage depends on the partner’s mood*” ; 6 (24%) expressed the desire for children [with four using condoms and two not using any method]; 3 (12%) reported that the side effects and desire for children were cited among factors affecting contraception uptake [All the three were using condoms]. Two women using condoms in these categories reported that: “*Condom is preferred since it does not disturb your cycle as compare to other contraceptive methods and protects you from getting another virus (re-infection). But if you need a pregnancy you just*

take it off during your days..” ; 2 (8%) participants reported that socio-cultural norms were main reasons that affect contraception uptake [All the two were not using any method of contraception]. The following statement has been made by one woman interviewed: *“as an African woman , you are expected to carry children and if you are not falling pregnant, the in-law, family and neighbours will be lathing to you saying that you are sterile, but being HIV-positive is a challenge”* ; Another woman said: *“In my culture , a woman does not have power to control her fertility using contraception. I feel like using it (contraception) is against culture. When you are in relationship with a man, you are also expected to give him children”* ; 2 (8%) participants mentioned that religious factors have significant influence on contraception uptake [Two of these participants did not use any contraceptive method], they reportedly said that: *“Christianity does not allow contraception practices and usage of condoms is condemned by god, so if you are a Christian normally you are not suppose to use these methods”*; only 5 (20%) participants consistently used a specific contraceptive method and did not report any factor affecting the uptake [with one participants using pills, three used Depo-Provera and another who used bilateral tubal ligation].

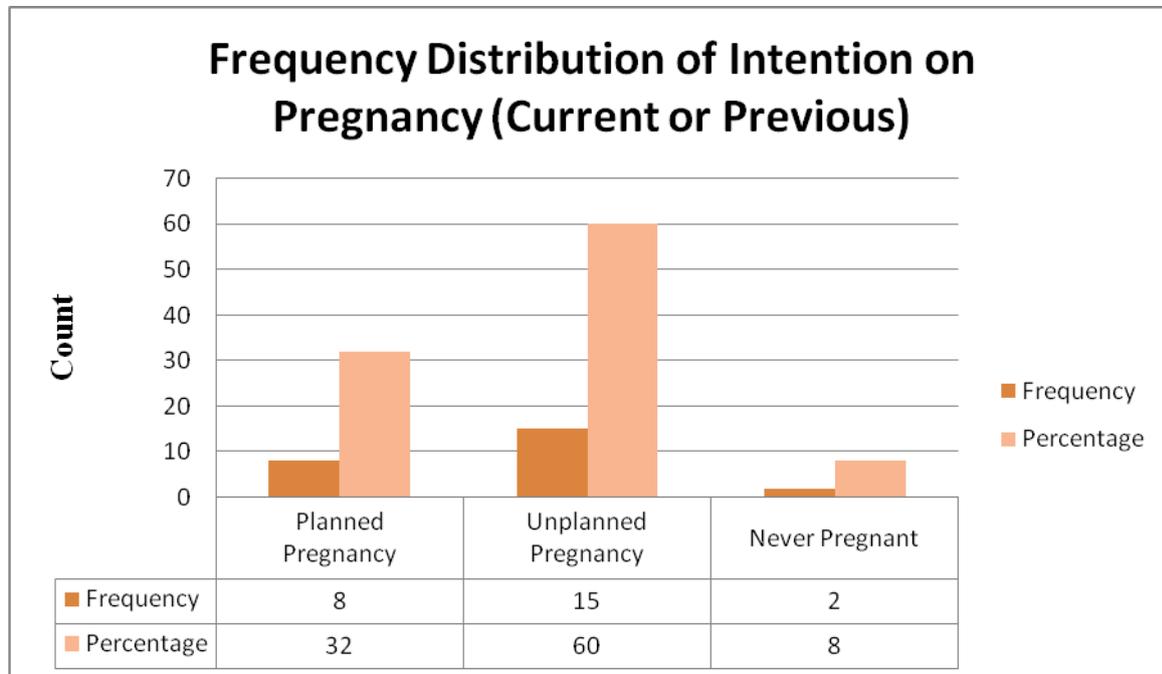
4.5 Contraception , childbearing intentions and HIV

Under contraception, childbearing intentions and HIV, the author presented the following points: pregnancy intention, partners expectations about childbearing and fertility preference for HIV-positive women.

4.5.1 Pregnancy intention

Out of the 25 participants, 15 (60%) had an unintended (unplanned) pregnancy; 8 (32%) had planned for their current or past pregnancy. Whereas 2 (8%) has never been pregnant (figure 4.11).

Figure 4.11
Frequency Distribution of Participants on Pregnancy Intention



4.5.2 Partners expectations about childbearing

Out of 25 participants, 11(44%) participants ‘partners were expecting more children. Many of these participants reported their sexual partners would reject contraception if they did not yet have a male child : *“if you use contraception and you do not want to conceive, the partner will just abandon you and get another woman”*; 5 (20%) participants were encouraging their partners to stop bearing children. This group of women said: *“my partner is ok with the current number of children we have because I am HIV-positive and my health is at risk”*; 2 (8%) did not know their partners’ expectations about childbearing. The subject has never been discussed: *“I have not discussed that with my partner”*; 7 (28%) participants reported their partner needed one child from this new relationship as evidence of love. One woman interviewed reported *“my partner needs a child from me and he used to say that if you love me, you need to give me my own child”*.

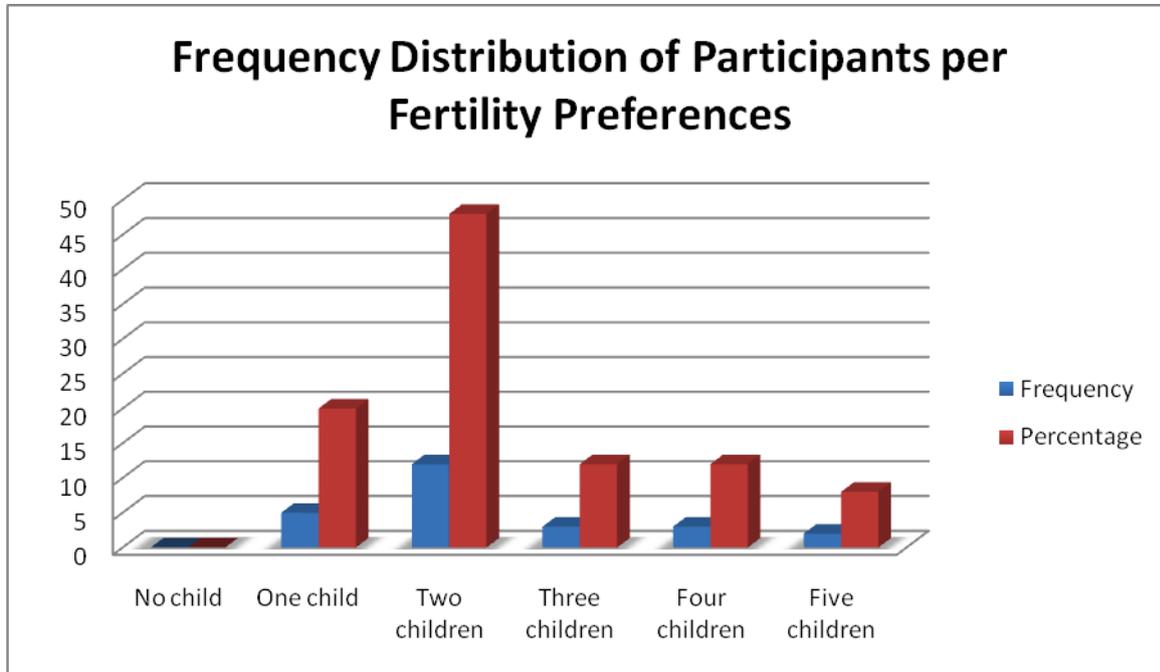
4.5.3 Fertility preference for HIV-positive women

The majority of participants in figure 4.12, 12 (48%) preferred to have two children; 5 (20%) participants needed one child; 3 (12%) participants preferred four children; 2 (8%)

participants needed 5 children; 3 (12%) participants desired three children. The totality of participants opted for motherhood and needed at least one child.

Figure 4.12

Distribution of Participants per preferred number of children



4.6 Risks associated with conception and HIV

The majority of respondents 8 (32%) reported that maternal health was at risk. These respondents mentioned: *“When a HIV-positive mother is pregnant, her ‘masole ‘ (CD4-count cells) can go down and her virus increases. This will make you more sick even putting your life in danger”* ; 4 (16%) participants said there were chances for transmission of the infection to the sexual partner (horizontal transmission). The following statement was made by some respondents: *“If you are HIV positive and get pregnant your partner also is at risk of infection with HIV because you did not use any protection”*; the other group of participants 5 (20%) mentioned the infection can be passed to the baby (vertical transmission). Statement such as: *“Some women when they are pregnant, they do not want to take ARVs to protect their babies. But when they give birth you found that their babies also have the virus”* ; some participants 3 (12%) reported the woman can get a different type of virus (re-infection); the other 3 (12%) participants did not know the real risks of conception that might be associated with HIV infection. The last 2 (8%) participants mentioned miscarriage and prematurity as risks.

4.7 Understanding the role of contraception as a HIV prevention strategy

Out of 25 participants, 17 (68%) understood the role of FP (Contraception) as child spacing the program. They reported that contraception prevent unintended pregnancies. When asked a question such as: What is your understanding of family planning ? The majority of participants made the following statement: *“If a woman does not want a pregnancy, she can just use contraception to avoid it , but some women do not use contraception and often carry unwanted pregnancies ..”*. Some respondents 5 (20%) said contraception can prevent both unintended pregnancies and STI including HIV to sexual partner. A limited number of participants 3 (12%) had a wider understanding of the role of contraception and mentioned that, in addition to prevention of unintended pregnancies and STI, contraception can help HIV-positive woman avoid transmission of HIV to her baby (avert HIV-positive births). They said: *“Since there is risk of transmission of the virus to the baby, if a woman does not fall pregnant using these contraception, this will prevent her baby from getting the infection”*.

4.8 Conclusion

This first section presented data organization, the participants characteristics and qualitative data. Qualitative data focused on contraception / FP and HIV ; contraception , childbearing intentions and HIV. But also on participants perceived risks associated with conception and HIV ; their understanding the role of contraception as a HIV prevention strategy. The second section of this chapter deals with the discussion of the study findings.

CHAPTER V

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The discussion will be placed in context against the background of the findings in chapter four. The focus will be on: Family planning knowledge and current usage, reproductive intention including fertility preference, and factors affecting contraception uptake. This section will also present the level of understanding of contraception as a HIV Prevention strategy which include perception of risks associated with conception among women living with HIV.

This chapter will highlight the findings from the research project in relation to current knowledge of contraception, contraception practices among participants and factors that contribute to the low uptake of contraceptive methods by HIV-positive women of child-bearing age group in Kasane. But it will also make recommendations depending upon the findings on the ground with emphasis on how to improve contraception uptake among HIV-positive women in order to avoid unintended pregnancies and reduce vertical and horizontal transmission of HIV. Thus strengthening HIV/AIDS and family planning linkage. These recommendations will underline the role of contraception in HIV prevention. The problem statement for the study was placed in context: What are the factors that contribute to the low uptake of contraceptive methods among HIV-positive women in Kasane?

The objectives of the study are:

- To identify the current knowledge of HIV-positive women on existing contraceptive methods,
- To determine current contraceptive practices among HIV-positive women,
- To identify barriers to contraception use among HIV-positive women,
- To provide recommendations on how contraception uptake can be improved among HIV-positive women within the local community of Kasane.

The analysis is presented against the background of the objectives guiding the direction chosen to follow.

5.2 Discussion

The discussion of study findings is in line with the the initial objectives presented in the following order:

5.2.1 Family planning / Contraception knowledge and current usage

The study findings revealed most participants had some knowledge on contraceptive methods and also acceptable level of understanding of their importance. Despite this widespread in knowledge and understanding of contraception, the large majority of HIV-positive women were not using any contraceptive methods (44%) with a significant proportion of participants using condoms as contraceptive methods (36%). However, the frequency of unintended pregnancies and inconsistency condoms use as reported by participants shows contraception uptake was still low among women. This is in agreement with the results of a study conducted by Schwartz et al. (2012) in South Africa on high incidence of unplanned pregnancy after Antiretroviral therapy initiation in which they compared incidence of unplanned pregnancy according to baseline unmet need for contraception and found that women with a baseline unmet need for reliable contraception had a higher incidence of unplanned pregnancy during study follow-up as compared to women who reported use of a reliable contraceptive (log-rank $p,0.01$). They revealed women reporting condom use alone to prevent pregnancy had similar cumulative incidence rates of unplanned pregnancies to women reporting no reliable method use. If condoms are left out, the proportion of women using contraception drops to 20%. Furthermore, the majority of participants (36%) in the study were aged between 30-34 years and old enough and likely to be engaged in longstanding relations of thrust. This could justify low uptake of contraceptive especially condoms, the only method that can prevent both unintended pregnancies and STIs including HIV. According to (BAIS III, 2009) the sexual history and behaviour in the reproductive age group revealed generally the use of condom tends to decline during sexual intercourse with the next-most and second-most recent partners. The knowledge of contraceptive methods among HIV-positive women might have have some gaps, making the choice difficult. This is in line with a survey conducted in 14 countries among 7000 women irrespective of their HIV status between 14-40 years showed that knowledge gap in FP methods restricts women's contraceptive choices and hence use, and that women fail to take advantage of new contraceptive methods due to lack of knowledge and stay with the familiar options (Rossella, 2006). No participant, in this study, used dual protection that combine any other

contraceptive method with condom which protect against STIs/HIV transmission and unintended pregnancies; and consistent condoms usage that provide this dual protection was mostly opposed by sexual partner and interfered with women desire for children.

5.2.2 Reproductive intention

The findings from the study revealed the totality of participants had expressed the desire for motherhood through their fertility preference (100%). Due to the HIV positive status, many women would like to space or limit the number of children using contraception and this might be a real challenge for those who do not have yet any child. The fertility preference was assessed as giving a specific number of children one would like to have and every woman, in this study, preferred to have at least one child. Many women, especially those living with HIV, have limited decision-making capacity and their intentions to limit or space children is compromised by a number of factors. Thus many women still carry unintended pregnancies which occur mainly because of low uptake of contraception. About 60 % of participants had an unintended pregnancy. This is in line with the results of a study conducted in Ontario by Mascolini (2011) on rates of unintended pregnancies among HIV-positive women. This study revealed the proportion of unintended pregnancy after they knew their HIV status were estimated at 54%. Similarly, a study conducted in Zimbabwe by Mukotekwa (2009) on subsequent pregnancies among HIV-positive women identified in PMTCT Program, revealed an increased number of women who became pregnant after they have been aware of their HIV status. In this last scenario, their unplanned pregnancies were associated with improved health status of the women on ARVs, patients not aware of returned fertility and also inadequate family planning counselling.

One of the findings of this study reveals a large proportion of participants (68%) preferred and intended to have a limited number of children between one and two. This is similar to a study conducted on Ontario, Canada revealed about 69 % of participants having and 58% of participants intending to become pregnant in the future the significant predictors of fertility intentions were: younger age (age<40) ($p<0.0001$) and a lower number of lifetime births ($p = 0.02$) (Loutfy et al., 2009).

The socio-demographic of this study shows 72 % of participants were singles and about 76 % attended only secondary education with limited job opportunities or unemployed (68%).

These factors could contribute to the financial dependence of many women. Thus compromising their autonomy and decision-making capacity regarding childbearing and contraception usage and does not give them chance to negotiate safer sex during sexual encounters. There seems to be a relationship between education and FP use. This supports the findings from the study conducted in Sudan revealed that couples' education were significantly associated with use of family planning in this setting (Ali et al., 2011).

Contrarily, the results of the study conducted by Oraka et al. (2012) on pregnancy and contraception shows that HIV-positive women were less likely to report wanting additional children than HIV-negative women (8 vs. 49%, $P < 0.001$).

5.2.3 Factors affecting contraception uptake

These factors will be discussed individually and include: partner refusal, desire for children, Socio-cultural and Religious factors and side effects.

5.2.3.1 Partner refusal

Many participants commented their sexual partners were opposed to the idea of FP and also had high expectations on childbearing with desire for more children, particularly the importance of male child (heir), thus hindering contraception uptake. About 28% of participants 'partners refused contraception. some partners refused the use of contraception because of their interference with sexual pleasure. This corresponds to the findings of the study conducted by Imbuki et al. (2010) in which male partners were unsupportive of contraceptive use because the methods reduced the pleasure experienced during sex due to decreased sensation (in the case of condoms), decreased female libido (in the case of hormonal contraceptives), and odd sensations during sex (in the case of IUDs).

Kabir et al. (2003) in their study shows about 65% of men respondents disapproved of the concept of contraception. Disapproval was higher among those with low educational attainment. More than two-thirds (68%) of the men felt family size determination and contraceptive decision-making was entirely their responsibility, while 73% had never discussed these. The same study revealed a positive attitude in the husband was significantly associated with current use of contraception ($\chi^2 = 5.32$; $df = 1$, $p < 0.05$). Another study Iso revealed partner opposition was found to account for as much as 20 percent of unmet need

reported by women and appears to reduce contraception prevalence by roughly one-fourth for both men and women (Wolff et al., 2000).

5.2.3.2 Desire for children

The desire for children characterises most of women including those living with HIV. In this study, about 24 % of women had expressed the desire for children. There is similarity with the study by Wanyenze et al. (2011) on uptake of FP and unplanned pregnancies among HIV-infected individuals in which about 20% (180) of the respondents who already had children desired having more children. A slightly larger proportion of men (23%; 85) than women (19%; 95) desired more children. Half of the women (182) and 34% (100) of the men said their partners desired having more children. Such desire will naturally undermine contraception uptake.

Similarly a study conducted in United States shows 28-29% of HIV-infected men and women receiving medical care in the United States desire children in the future. Among those desiring children, 69% of women and 59% of men actually expect to have one or more children in the future (Chen et al., 2001).

Botswana Government has a strong and sustainable national ARVs program that have restored health condition of many people living with HIV and decisions regarding their sexuality and reproduction may be reconsidered as the health and well-being of women improve with antiretroviral therapy (WHO, 2006). In addition, prevention of mother-to-child transmission (PMTCT) program is widely utilised by women in this country. This could be the motivation for such desire as many women living with HIV would like to have a HIV negative child. It is also reasonable to anticipate that increasing access to public HAART is likely to influence the reproductive attitudes and behaviour of considerable numbers of HIV-infected women (Bussmann et al., 2007).

5.2.3.3 Socio-cultural and religious factors

In many African cultures and religions, childbearing has significant role in the life of any woman and pregnancy is considered as natural gift from God and contraception may be interpreted as an offense to cultural and religious norms. This study shows 16 percent of women did not use any contraceptive method. This compare with a study conducted by

(Srikanthan & Reid, 2008) which revealed religious and cultural factors have the potential to influence the acceptance and use of contraception by couples from different religious backgrounds in very distinct ways. Many religions are against unnatural means of contraception. Cultural factors are equally important in couples' decisions about family size and contraception; for some cultures, family, marriage are important in the fulfilment of cultural expectation and each sexual act need to be for the exclusive purpose of procreation. In a study conducted by Kabir et al. (2004) shows about 65% of men who participated in the study on the role of men in contraceptive decision-making in Fanshekara Village, Northern Nigeria disapproved the very concept of contraception. Reasons for the men's disapproval were mainly based on religious and cultural factors.

5.2.3.4 Side effects

The findings of this study reveal that perceived and experienced side effects constitute reasons for low uptake of specific contraceptive methods. About 12 percent of respondents stated side effects as factors affecting contraception uptake. Although these women were using condoms as alternative contraception, desire for children would lead to its inconsistent use for some women. This is similar to a study conducted by Omo-Aghoja et al. (2009) on factors associated with the knowledge, practice and perceptions of contraception in rural southern Nigeria which revealed that the majority of participants (33.8%) had fear for side effects as major reason for present non-use of contraceptives. Similarly a study conducted in Imbuki et al. (2010) in which Women reported method discontinuation because of side effects, and menstrual changes. This findings suggested perceptions about side effects play important roles in contraceptive decisions.

5.2.4 Understanding of contraception as a HIV prevention strategy

Many women do not understand contraception as an HIV prevention strategy. About 68 % of participants understood contraception as a child spacing and/or fertility regulation. In addition only twelve percent of participants though contraception could help HIV-positive women avoid transmission of HIV to her baby (avert HIV-positive births).

The perceived risks associated with conception were mainly maternal health but also transmission of the infection to the baby and sexual partner. A similar level of risks perception has been described among women in the study published by Guttmacher Institute

on the role of contraception in preventing HIV (Cohen, 2008). According to a study conducted on reproductive choice for women and men living with HIV, many respondents expressed fear of transmitting HIV to their sexual partner and babies and raised concerns about their own health (Delvaux & Noëstlinger, 2007).

Majority of participants had knowledge about contraception but its use was limited by a number of factors including: partner's opposition, desire for children, fear for side effects and socio-cultural factors. The discussion shows that though the reproductive intention remained high among HIV-positive women, many women did not have reproductive decision-making capacity to control their fertility; thus occurrence of unintended pregnancies. The understanding of the role of contraception was restricted to family planning purpose for many participants. A limited proportion of women understood contraception as a HIV prevention strategy.

5.3 Conclusion of findings

Sexual and reproductive health of people living with HIV is associated with the risk of disease transmission to both sexual partner and baby. In addition, occurrence of unplanned pregnancies and other sexually transmitted infections among women of this category undermine HIV prevention efforts. Effective and consistent use of contraception is a comprehensive strategy that could prevent unintended pregnancies and STIs, avoid further HIV transmission and regulate fertility.

In this study a high proportion of participants were not using any contraceptive methods (44%) and contraceptive prevalence was 56%. About (36%) of those using contraception were using condoms as contraceptive method. No participant in this study, used dual protection that combine any other contraceptive method with condom which protect against STIs/HIV transmission and unintended pregnancies; and consistent condoms usage that provide this dual protection was mostly opposed by sexual partner and interfered with women desire for children. The study revealed the proportion of those using modern contraceptive options other than condoms was (20%) with injections at (12%), pills (4%) and bilateral tubal ligation (4%). There is need to involve male partners in contraception counselling to increase the uptake. Continuous education of couple on the importance of consistent use of condoms in dual protection is also needed to minimize the risks of STIs/HIV and unintended

pregnancies. This study also revealed desire for children, partner refusal, side effects and socio-cultural influences are some of the factors that contribute to the low uptake of contraception in Kasane and many HIV-positive women face challenges to use family planning services as they do not have control over their own fertility. The rates of unintended pregnancies among participants were high (60%), which usually occur in the absence of contraception uptake and/or its inconsistent usage. However, some women have expressed the desire to have children, also undermining contraception uptake. Identification of factors contributing to the low uptake of contraception will help policy-makers draft and develop a strategic approach for comprehensive family planning interventions such as counselling and health talks that convey HIV prevention messages.

The findings of this study shows all participants (100%) had some knowledge about contraception and their main source of education was health facility. Despite this superior knowledge and the perceived risks associated with conception, a limited proportion of women (12%) had a wider understanding of contraception as a HIV prevention strategy and fertility preference was high in this study. All participants opted for motherhood and needed at least one child whereas (48%) preferred to have at least two children. The choice to have a baby and fear of risks associated with conception put HIV-positive women in the dilemma to use contraception. To enhance this knowledge, these women need to know that the primary role of contraception is HIV prevention, and both prevention of HIV and the chance to have a healthy child pass through the use of effective contraception. Thus safe sex messages and discussions on the importance of planned pregnancies should prevail at each consultation. Furthermore, low level of education and low income status were most likely to be associated with low uptake of contraception among HIV-positive women.

This study also revealed family planning methods were accessible and affordable to all participants and PLWHA were not discriminated against. Maternal health (32%) and mother-to-child transmission of HIV (20%) were found to be the most perceived risks associated with conception (pregnancy). HIV-positive status had some influence on participants reproductive choice.

5.4 Recommendations

The current uptake of modern contraception other than condoms is low and condom, being a contraceptive method that provide dual protection is used inconsistently by some

participants. Following are recommendations to improve contraception uptake among PLWHA:

There is need to strengthen integration of HIV services into FP services and development of a strategic approach that conveys HIV prevention messages and ensure continuous education for women living with HIV on the role of contraception in prevention of the epidemic and the importance of mother-to-child transmission prevention;

Contraception counselling should be incorporated into HIV-positive post test counselling and discussed at each follow up visit with emphasis on safe sex and planned pregnancies to promote family planning practices for HIV prevention;

As almost all birth control methods have failure rates the dual protection combining condom with any other contraceptive method, should be the gold standard for all HIV-positive women since it provides optimum protection against pregnancy and avoid STIs/HIV transmission;

Increase effort to involve male partners in FP programs and encourage couple counselling on contraception in order to get their approval and fight misconception that prevail about contraception and improve the uptake;

Need for training of medical staffs on integrated approach for provision of HIV and SRH services, and appropriate counselling skills. Training should enable service providers to address the reproductive health needs of women living with HIV by provision of effective, appropriate and adequate contraception, and also discuss options for safe pregnancy where applicable;

Ministry of health to put in place community based motivational structures aimed at sensitisation of HIV-positive women on contraception uptake. Women using modern contraceptive methods should be encouraged to champion these structures, share experiences and serve as model to their peers;

Further research should be conducted in this field to overcome the identified limitations to ensure a greater contribution can subsequently be made to the body of knowledge.

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ADDENDUM 1: CONSENT FORM ENGLISH VERSION



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STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Role of Contraception in HIV Prevention

You are asked to participate in a research study conducted by Mr. Lufuluabo (Medical Doctor); Mr. Masogo (Social worker) and Ms. Nyanga (nurse) from the Africa Centre for HIV/AIDS Management at Stellenbosch University. The results of the study will be contributed to the dissertation. You were selected as a possible participant in this study because you are a female client of reproductive age group living with HIV and likely to use contraception as an HIV prevention strategy.

1. PURPOSE OF THE STUDY

The study is designed to identify the factors that contribute to the low consumption of contraceptive methods among HIV-positive women in Kasane in order to improve contraception consumption among HIV-positive women of reproductive age group (15 – 49 years) and in so doing to prevent unintended pregnancies, other Sexually Transmitted Infections (STIs) and avoid HIV-positive births in the local community of Kasane.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things: Sign this consent form and answer the questions. A researcher will ask you questions in relation to contraception/family planning for about 30 minutes. One-to-one interview will be conducted once in the consultation room during working hours or on any given day of the week at your own convenient place and time. Your role is to answer questions to enable the researcher collecting needed information for the purpose of this study. The procedure for recruitment will be as follow: firstly, the research topic is introduced as part of morning talk

to all HIV-positive clients attending the Antiretroviral (ARVs) Clinic in Infectious Disease Control Clinic (IDCC) and pregnant women, waiting for prevention of mother-to-child transmission of HIV (PMTCT) with Triple prophylaxis, at Antenatal Clinic that specific day. Thereafter, each fifth HIV-positive woman entering the consultation room will be randomly selected to participate in the study. As a potential participant, you have got all the rights attributed to human subjects involved in research including right to privacy, respect, autonomy and confidentiality.

3. POTENTIAL RISKS AND DISCOMFORTS

The study is conducted on human subjects and is focusing on the sensitive issue of HIV infection. The reasonable foreseeable risk with this study is discomfort. This risk will be managed with appropriate supportive counselling. Participants privacy, autonomy, confidentiality will be respected and observed all times. Informed consent is required and data will be anonymously recorded.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The current study will primarily benefit female clients of reproductive age group living with HIV infection who will understand that contraception is a cost-effective HIV prevention strategy and that using contraceptives HIV-positive women can achieve their fertility preferences to remain optimally healthy. This may also be beneficial to health care providers who will be reminded on the benefice of contraception in the fight of HIV infection. The study can also benefit to policymakers and government officials who may actively engage the fight against HIV/AIDS using contraception by drafting prevention strategies that are more focusing on contraception.

5. PAYMENT FOR PARTICIPATION

Participants will not receive payment

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of privacy with participants being assured that all data collected would be treated with absolute confidentiality and that all the records would be kept safe and secured. Data collection instrument will not display names or particulars linking the participants with this study. Data collected electronically will be stored

on a password-protected personal computer and network drives. It will only be accessed by the researcher. Hard copies of questionnaires will be stored in locked cupboards at the research's office when not in use for data entry or analysis. The data will be destroyed after three (3) years. Upon completion of the study, the hard copy and electronic copy of the outcome (results) will be made available to the Africa Centre for HIV/AIDS Management as the institution supervising the research. A copy of this study will also be submitted to both Research and Ethics Committee University of Stellenbosch and Botswana Health Research Unit. It will be available at Chobe DHMT office and in all health facilities in Chobe district.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. e.g. critically ill health, death or relocation of the participant.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

1. Mr. Ngeleka Albert LUFULUABO (Principal investigator) at 00267 74139522 / 00267 6250333. P.O. Box 942, Kasane. DA 37, Nunga Road. White city/ Kasane / Chobe district/ Botswana. akanguvu@yahoo.fr;
2. Prof. Elza THOMSON (Supervisor) at elzathomson@gmail.com. Stellenbosch University. South Africa;
3. Ms. Kesego NYANGA (Co-Investigator) at 00267 71665000/ 00267 6250333. P.O. Box 3 Kasane. Plot No: 1938. China Town / Kasane / Chobe District / Botswana, ksegonyanga@yahoo.com;
4. Mr. Goitseone MASOGO (Co-Investigator) at 00267 72844264 / 00267 6250333. P.O. Box 3 Kasane. Plot No: 179. Kgaphamadi / Chobe District / Botswana. masogoitseone@gmail.com.

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms

Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

The information above was described to [*me/the subject/the participant*] by [*name of relevant person*] in [English/Setswana] and [I am/the participant is] in command of this language or it was satisfactorily translated to [me/him/her]. [*I/the participant/the subject*] was given the opportunity to ask questions and these questions were answered to [my/his/her] satisfaction.

[I hereby consent voluntarily to participate in this study/I hereby consent that the subject/participant may participate in this study.] I have been given a copy of this form.

Name of Subject/Participant

Name of Legal Representative (if applicable)

Signature of Subject /Participant or Legal Representative

Date

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ [*name of the subject/participant*] and/or [his/her] representative _____ [*name of the representative*]. [He/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in [English/Setswana] and [no translator was used/this conversation was translated into ___Setswana by _____].

Signature of Investigator

Date

ADDENDUM 2: CONSENT FORM SETSWANA VERSION



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STELLENBOSCH UNIVERSITY MAIKANO A GO TSAYA KAROLO MO PATLISISONG

Seabe sa tsa boiphemelo mo go thibeleng mogare wa HIV

O kopiwa go tsaya karolo mo patlisisong e e dirwang ke Rre Lufuluabo (ngaka); Rre Masogo (raboipelego) le Mme Nyanga (mooki) go tswa kwa lekgotleng la Africa Centre for HIV/AIDS Management kwa Stellenbosch University. Otlhophilwe go ka tsaya karolo ka gore o mme yo o tshelang ka mogare mme e bile go na le kgonagalo ya gore o bo o dirisa tsa boiphemelo go thibela kanamo ya mogare wa HIV.

1. Maikaelelo a patlisiso

Patlisiso e e diretswe go elmoga mabaka a go bo bomme ba ba nang le mogare wa HIV mo Kasane ba tsaya tsa boiphemelo ka dipalo tse di kwa tlase. Se e le go leka go tokafatsa dipalo tse go itebagantswe le bomme ba ba dingwaga tse di lesome le botlhanog ya kwa go tse di masome a mane le boferabongwe. Mo go tlaa itsa boimana jo bo as ipakanyediwang, malwetsi a mangwe a dikobo le bana ba ba tsholwang ban a le mogare mo Kasane.

2. Tsamaiso

Fa o ithaopa go tsaya karolo mo patlisisong e, re tla go kopa go dira tse di latelang: go baya sekano mo pampering ya tumalano. Mmotsolotsi o tlaa go botsa dipotso tse di itebagantseng le tsa boiphemelo kgotsa tlhatlologanyo tsholo, metsotso e ka nna masome a mararo. Fa dipotso di bodiwa e tlaa bo e le wena le mmotsolotsi fela. O tlaa kopana le ene fa gare ga beke ka nako e e go siametseng (fa go theogetswe), le mo lefelong le le go siametseng. Seabe sa gago ke go araba dipotso, go letla mmotsolotsi go kgobokanya kitso yotlhe e e tlhokegang. Go tlaa salwa tselana e e latelang morago: Go tlaa itsisiwe balwetsi botlhe ba ba

tlang go bona thuso ya tsa diritibatsi (ARV) le basadi ba ba mo lenaneong la thibelo mogare go tswa kwa go mmangwana go ya kwa loseeng , ka setlhogo sa patlisiso e. Mosadi mongwe le mongwe wa botlhano yo o tsileng go bona dithuso tse, o tlaa tlhophiwa go tsaya karolo mo patlisisong e. Jaaka motsaya karolo o sireletsegile, o na le ditshwanelo tsa gore tsotlhe tse di tlaa buiwang e nne sephiri.

3.Dikgoreletsi tse di ka nnang teng

Patlisiso e e dirwa go itebagantswe matshelo a batho le kgang e e masisi ya mogare wa HIV. Sekgoreletsi se setona se se ka nnang teng ke go tlhoka go iketla mo mowing. Go thusa mo go se go tlaa nna le bogakolodi le tshidilo maikutlo. Tsotlhe tse di tlaa buiwang, maina a motsaya karolo e tlaa nna sephiri ka nako tsotlhe.

4. Mosola wa patlisiso mo setshabeng

Patlisiso e mosola mo go bo mme ba ba nang le mogare wa HIV, ba ba tlaa tlhaloganyang gore tsa boiphemelo ke tsela nngwe ee bolokang madi fa go thibelwa mogare wa HIV gape go siametse go thusa botsogo jo bo siameng. Patlisiso e e ka thusa gape lephata la botsogo gore le ka tokafatsa tiriso ya tsa boiphemelo jang go thibela mogare.

5.Dituelo tsa batsaya karolo

Batsaya karolo mo patlisiso gab a na go bona dituelo dipe.

6.Bosephiri jwa patlisiso

Sepese babatlisisi ba tlan bong ba se boleletswe mabapi le patlisiso e, se se ka dirang gore ope a se golaganye le wena e tla nna phitlhela; mme se ka ntshediwa ntle fela ka tetla ya gago kgotsa fa e le gore molao ke one o tlamang gore go nne jalo. Sephiri se tla tshegediwa ebile dikarabo tsotlhe tse di tla bong di fiwa ke batsaya karolo di tla tshwarwa ka sephiri se se ko godimo, le tsotlhe tse di tla bong di dirisitswe mo go kokoanyeng dikarabo di tla bewa sentle. Didirisiwa tse dit tla dirisiwang go batla dikarabo mo batsaya karolong ga di na go kwalwa maina kgotsa sepe se se tla senolang batsaya karolo. dikarabo tsotlhe tse di tla tsewang go dirisiwa boranyane di tla batla sesupo kgotsa sekao sa sephiri gore ope a goroge kwa go tsone. Mmatlisisi ke ene fela a tla kgonang go goroga kwa go tsone mo sebalamakgolong (khomputara). dipampiri tsa dipotso tsone di tla lotlelelwa mo dikobotong mo ofising ya mmatlisisi fa di sa dirisiwe. morago ga dingwaga tse tharo, dikarabo tse di tla sennwa.

ko bokhutlong ja patlisiso, mekwalo le tse di bolokilweng mo go tsa maranyane mabapi le maduo a patlisiso di tla nna teng ko Africa Centre for HIV/AIDS Management ka gore ke bone ba ba eteletseng pele patlisiso e. Moriti wa patlisiso e o tla isiwa ko Research and Ethics Committee ya University ya Stellenbosch le Botswana Health Research Unit. E tla nna teng gape mo mafelong a tsa botsogo mo Chobe, le office ya DHMT mo Chobe.

7. Go tsaya karolo le go ikogela morago mo patlisisong

o na le itlhopelo ya go tsaya karolo mo patlisisong e kgotsa nnyaa. Fa o thaopa ya go tsaya karolo mo patlisisong, o ka ikogela morago nako nngwe le nngwe fa o batla ntle le ditlamorago dipe. O ka nna wa se ke o arabe dipotso dingwe fa o sa tseege sentle, mme o tsewelele o tsaya karolo mo dipatlisisong. Mmotsolotsi o ka nna a go ntsha mo patlisisong e fa a bona go tlhokegega, o ka lebelela mabaka a gago a botsogo, loso kgotsa fa fuduga.

8. GO BONA BABOTSOLOTSI

Fa o na le dipotso kana dikakgelo mabapi le patlisiso e tsweetswee gololesega go itshoraganya le batho ba.

1. Mr. Ngeleka Albert LUFULUABO (mmatlisisi mogolo) at 00267 74139522 / 00267 6250333. P.O. Box 942, Kasane. DA 37, Nunga Road. White city/ Kasane / Chobe district/ Botswana. akanguvu@yahoo.fr;
2. Prof. Elza THOMSON (mogolwane) at elzathomson@gmail.com. Stellenbosch University. South Africa;
3. Ms. Kesego NYANGA (mmatlisisi ka ene) at 00267 71665000/ 00267 6250333. P.O. Box 3 Kasane. Plot No: 1938. China Town / Kasane / Chobe District / Botswana, kesegonyanga@yahoo.com;
4. Mr. Goitseone MASOGO (mmatlisisi ka ene) at 00267 72844264 / 00267 6250333. P.O. Box 3 Kasane. Plot No: 179. Kgaphamadi / Chobe District / Botswana. masogoitseone@gmail.com.

9. DITSHWANELO TSA MOTSAYA KAROLO MO PATLISISONG.

O ka ikogela morago go tswa mo patlisisong e nako nngwe le nngwe go sana ditlamorago/ kotlhao epe. Ga gona dikatso dipe tse o tlaa di boning go bo tsere karolo mo patlisisong e. fa o na le dipotso dipe ka ditshwanelo tsa gago jaaka motsaya karolo mo patlisisong o ka bua le Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] wa lephata la diplatlisiso.

SEKANO SA MOTSAYA KAROLO MO PATLISISONG

Ke le _____ kitso yotlhe e e fa godimo ke e tthaloseditswe ka sekgowa / Setswana, ke _____. Nna [] ke dumalane le gore ke e tthaloseditswe ka botlalo mo go nkgogofatsang. Ke le motsaya karolo ke filwe sebaka go botsa dipotso tse di neng tsa arabiwa ka botlalo.

[Ke ithaopa go tsaya karolo mo patlisisong e.] ke e filwe.

Leina la motsaya karolo / moithaopi

Leina la moemedi wa semolao (fa go tlhokega)

Sekano sa motsaya karolo/moithaopi kana moemedi wa semolao Letsatsi

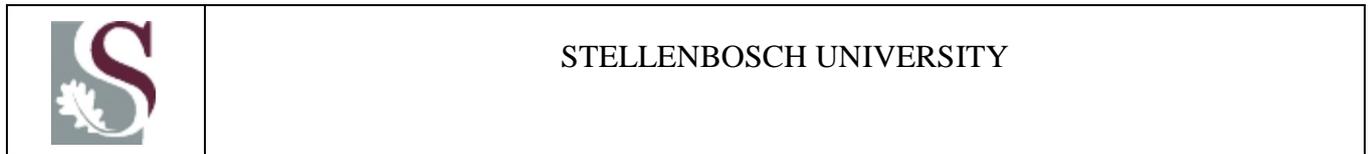
SEKANO SA MMOTSOLOSI

Ke le [] ke ikana gore ke tthaloseditse [] kana mmoeledi wa gagwe wa semolao e bong[] ka botlalo ka se se tlhokegang mo patlisisong e. O ne a fiwa nako ee lekaneng gore o ka botsa dipotso mabapi le patlisiso e. Puisano e, e ne e diragadiwa ka (Sekgowa/ Setswana) mme ebile go ne go sena moranodi /kana puisano e ne ya ranoelwa kwa sekgoeng ke _____.

Sekano sa mmotsolosi

Letsatsi

ADDENDUM 3: CHILDREN ASSENT FORM ENGLISH VERSION



PARTICIPANT INFORMATION LEAFLET AND ASSENT FORM



TITLE OF THE RESEARCH PROJECT: Role of Contraception in HIV prevention.

RESEARCHERS NAME(S):

1. Mr. Ngeleka Albert LUFULUABO (Principal investigator) at 00267 74139522 / 00267 6250333.
P.O. Box 942, Kasane. DA 37, Nunga Road. White city/ Kasane / Chobe district/ Botswana. akanguvu@yahoo.fr;
2. Prof. Elza THOMSON (Supervisor) at elzathomson@gmail.com. Stellenbosch University. South Africa;
3. Ms. Kesego NYANGA (Co-Investigator) at 00267 71665000/ 00267 6250333. P.O. Box 3 Kasane. Plot No: 1938. China Town / Kasane / Chobe District / Botswana, kesezonyanga@yahoo.com;
4. Mr. Goitseone MASOGO (Co-Investigator) at 00267 72844264 / 00267 6250333. P.O. Box 3 Kasane. Plot No: 179. Kgaphamadi / Chobe District / Botswana. masogoitseone@gmail.com.

What is research?

Research is something we do to find new knowledge about the way things (and people) work. We use research projects or studies to help us find out more about disease or illness. Research also helps us to find better ways of helping, or treating children who are sick.

What is this research project all about?

This research project is about knowing why it is only fewer young women living with HIV can avoid unwanted pregnancies using contraception in Kasane. This research tries to identify factors that contribute to low consumption of contraception methods among HIV-positive women of reproductive age group (15 – 49 years).

Why have I been invited to take part in this research project?

You are one of the ideal candidates that meet all the requirements for participation to this study and we think you are representing the group of HIV-positive women of reproductive age.

Who is doing the research?

I am the one doing this research. My name is NGELEKA Albert LUFULUABO. I am a Congolese and work for the Ministry of Health of Botswana in the department of Clinical services. My place of work is Kasane Primary Hospital where I work at the position of a Senior Medical Officer. I am also a student at Stellenbosch University in South Africa in affiliation with the Africa Centre for HIV/AIDS Management. I am doing this as an assignment from the University of Stellenbosch (South Africa).

What will happen to me in this study?

After being selected as a participant to this study, you will be asked a couple of questions in relation to contraception use and family planning for about 30 minutes. Your role is to answer all asked questions to allow the researcher collect all needed information for this study. One-to-one interview will be conducted with you as a participant. This is preferred because we thought that an individual alone will feel free to give more information about her life or her behaviour than in a group of people. The interview will be conducted once in the consultation room during working hours or on any given day of the week at the participant convenient place and time.

If you volunteer to participate in this study, you need to sign this assent form and your parents/guardians have to agree for your participation by signing the consent form.

Can anything bad happen to me?

You may experience discomfort with some of the personal information released for the purpose of this study. This is why we prefer one-to-one interview that seems promoting more privacy and confidentiality.

Please, inform your parents or guardian if you are sick or in pain as a result of being in the study.

Can anything good happen to me?

You may benefit from this study by understanding in-depth the importance of contraception as a cost-effective HIV prevention used in the fight against HIV infection. But also the importance of planning a pregnancy to protect your own health. This study can also help health care workers and policymakers understanding why contraception consumption is low among HIV-positive women and therefore formulating new strategies to improve the contraception consumption. Thus, minimizing unwanted pregnancies among HIV-positive women and avoiding HIV-positive births.

Will anyone know I am in the study?

The consultation room or client home will be used for face-to-face interviews. Only the researcher, his assistants and the participant will be present to ensure privacy and confidentiality.

All data collected would be treated with absolute confidentiality and that all the records would be kept safe and secured. Data collection instrument will not display names or particulars linking the participants with this study. Participants will need to volunteer and records will be anonymous.



Who can I talk to about the study?

1. You can contact Mr. Ngeleka Albert LUFULUABO (Principal investigator) at 00267 74139522 / 00267 6250333. P.O. Box 942, Kasane. DA 37, Nunga Road. White city/ Kasane / Chobe district/ Botswana. akanguvu@yahoo.fr;

2. Prof. Elza THOMSON (Supervisor) at elzathomson@gmail.com. Stellenbosch University. South Africa;
3. Ms. Maléne Fouché at mfouche@sun.ac.za; Tel: 0027 21 808 4622 at the Division for Research Development Stellenbosch University.

What if I do not want to do this?

You can refuse to participate in the study or withdraw at any stage of the study without fear of being victimized or intimidated even if your parents or guardians have agreed to your participation. So, if you do not want none will force you to participate in the study. We need your agreement for participation. Your are autonomous to decide whether you will participate in the study or not.

Do you understand this research study and are you willing to take part in it?

<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------------------	-----------------------------

Has the researcher answered all your questions?

<input type="checkbox"/> YES	<input type="checkbox"/> NO
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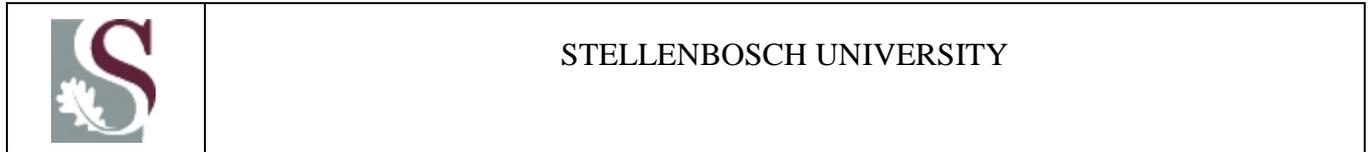
Do you understand that you can pull out of the study at any time?

<input type="checkbox"/> YES	<input type="checkbox"/> NO
------------------------------	-----------------------------

Signature of Child

Date

ADDENDUM 4: CHILDREN ASSENT FORM SETSWANA VERSION



TSHOBOKO KA PATLISISO



SETLHOGO SA PATLISISO: Seabe sa tsa boiphemelo mo go thibeleng mogare wa HIV

MAINA A BABATLISISI:

- 1 Mr. Ngeleka Albert LUFULUABO (Mmatlisisi mogolo) at 00267 74139522 / 00267 6250333. P.O. Box 942, Kasane. DA 37, Nunga Road. White city/ Kasane / Chobe district/ Botswana. akanguvu@yahoo.fr;
2. Prof. Elza THOMSON (Mogolwane) at elzathomson@gmail.com. Stellenbosch University. South Africa;
3. Ms. Kesego NYANGA (Mmatlisisi ka ene) at 00267 71665000/ 00267 6250333. P.O. Box 3 Kasane. Plot No: 1938. China Town / Kasane / Chobe District / Botswana, ksegonyanga@yahoo.com;
4. Mr. Goitseone MASOGO (Mmatlisisi ka ene) at 00267 72844264 / 00267 6250333. P.O. Box 3 Kasane. Plot No: 179. Kgaphamadi / Chobe District / Botswana. masogoitseone@gmail.com.

Patlisiso ke eng?

Patlisiso ke sengwe se re se dirang gore re bone kitso ka fa batho ba dirang dilo ka teng. Re dira dipatlisiso go nna le kitso e e ntsi ka malwetsi. Patlisiso e ne e thusa gape le go bona maano a a botoka go thusa batho kgotsa go alafa bana ba ba lwalang.

Patlisiso e ke ka fa eng?

Patlisisoe e itebagantse le le go itse gore ke eng palo ya bomme ba ba tshelang ka mogare ba ba tsayang tsa boiphemelo go thibela boimana e le kwa tlase. E tlaabo e itebagantse le bomme ba dingwaga tse di lesome le botlhano go ema ka tse di masome a mane le boferabongwe (15-49).

Ke eng ke laleditswe go tsaya karolo mo patlisisong?

O mongwe wa batho ba ba nang le tse di batlegang go tsaya karolo mo patlisisong e.

Patlisiso e dirwa ke mang?

Leina lame ke Rre Ngeleka Albert Lufuluabo , go tswa kwa Congo. Ke direla lephata la botsogo kwa kokelong ya Kasane. Ke ngaka teng mme gape kele moithuti kwa mmadikolo kwa Afrika Borwa kwa Stellenbosch University, e e dirisanang le lekgotla la Africa Centre for HIV/AIDS Management. Ke dira se e le tiro ya dithuto tsame go tswa kwa Stellenbosch University kwa Afrika Borwa.

Go ya go diragala eng ka nna mo patlisisong e?

Morago ga go tlhophiwa, o ya go bodiwa dipotso di itebagantse le tsa boiphemelo metsotso e le masome a mararo. Tiro ya gago e tlaabo e le go araba dipotso tse di bodiwang, go letla mmotsolosi go nna le kitso ee batlegang . O tlaabo o na le mmotsolosi fela lo le babedi ka nako ya dipotso, se ke go direlela gore o phuthologe go buisana le ene. Potsolotso e e tlaa dirwa Labone mongwe le mongwe mo mosong ka nako ya lesome. E tlaa direlwa kwa go go siametseng teng, kwa kokelwaneng kgotsa kwa lelwapeng la gago.

Fa o ithaopa go tsaya karolo mo potsolosong e, o tlaa tshwanelwa ke go baya sekano sa gago kgotsa, batsadi kgotsa batlhokomedi ba gago bat la tshwanelwa ke go baya sekano go supa fa ba dumalana gore o tseye karolo.

A sengwe se se maswe se ka ntiragaela?

O ka nna wa seke o phuthologe fa go bodiwa dipotso dingwe ka ga gago mo potsolotsong e, ke sone se o bonang re re e nne wena le mmotsolotsi fela. Bolelela batsadi kgotsa batlhokomedi fa o ka seke o tsoge sentle ka go bo o ne o le karolo ya potsolotso e.

A sengwe se se ntle se ka ntiragalela?

O kgona go tlhloganya ka botlalo gore tiriso ya tsa boiphemelo ke tsela e e thibelang mogare wa HIV le kanamo ya one. O ithuta gape go nna moimana fa go go siametseng teng, go babalela botsogo jwa gago. Patlisiso e e ka thusa ba lephata la botsogo go tlhloganya mabaka a gore ke eng dipalo tsa bomme ba ba tshelang mogare ba ba dirisang tsa boiphemelo di le kwa tlase, ka jalo ba ka tla ka ditselana tsa go tokafatsa seemo se. Mo go ka fokotsa dipalo tsa boimana jo nbo sa ipaakanyediwang le go fokotsa dipalo tsa bana ba ba tsholwang ba na le mogare.

A go na le yo o tlaa itseng gore ke tsere karolo mo patlisisong e?

Lefelo la patlisiso le tlaa bo le dirisiwa ke wena, mmotsolotsi le mothusi wa gagwe fela, ka jalo tsothle tse di tla buiwang koo ke sephiri. Dipampiri tsothle tsa potsolotso di tlaa bewa sentle, maina a batsaya karolo ga a na a supywa mo potsolotsong. Batsaya karolo e tshwanetse go nna baithaopi.

Ke ka bua le mang ka patlisiso ?



1. Mr. Ngeleka Albert LUFULUABO (Mmatlisisi mogolo) at 00267 74139522 / 00267 6250333. P.O.Box 942, Kasane. DA 37, Nunga Road. White city/ Kasane / Chobe district/ Botswana. akanguvu@yahoo.fr;
2. Prof. Elza THOMSON (Mogolwane) at elzathomson@gmail.com. Stellenbosch University. South Africa;
3. Ms. Maléne Fouché at mfouche@sun.ac.za; Tel: 0027 21 808 4622 at the Division for Research Development Stellenbosch University.

Fa ke sa batle go dira se?

O ka gana kgotsa wa ikogela morago go tswa mo patlisisong e ka nako nngwe le ngwe o sa tshabe go ka kgethololwa le fa batsadi kgotsa batlhokomedu ba gago ba ne ba dumetse gore o tseye karolo. Ke itlhophelo ya gago gore a o tsaya karolo kana nnyaa.

Ao tlhaloganya ka patlisiso e,e bile o ithaopa go tsaya karolo mo go yone?

EE

NNYAA

A mmotsolotsi o arabile dipotso tsa gago tsotlhe?

EE

NNYAA

A o tlhaloganya gore o ka tswa mo patlisisong e nako nngwe le nngwe?

EE

NNYAA

Sekano sa ngwana

Letsatsi

ADDENDUM 5: INTERVIEW GUIDE ENGLISH VERSION

ENGLISH INTERVIEW GUIDE

Introduction

The researcher is talking to some of HIV-positive women of reproductive age group (15 – 49 years), enrolled in antiretroviral (ARVs) program, on the role of contraception in HIV prevention but also on their need of having family and how they decide and plan for their accomplishment. In this study, the researcher wants a better understanding of factors which influence low consumption of contraception among HIV-positive women leading to unwanted pregnancies and HIV-positive births. The researcher would also like to know their perceptions, beliefs and understanding of family planning program. Privacy and autonomy are some of the basics of the rights you deserve and please remember that all the information you will give will be confidential, and you can opt not to answer some of the questions on issues you do not want to discuss. Information in relation to socio-demographic, understanding of contraception and HIV infection and prevention strategies will be collected. The length of this interview will be approximately 30 - 45 minutes.

A) Socio- demographic

1. How old are you?
2. What is your level of your education? Primary (), secondary (), tertiary (college or University)? ();
3. How many children you have got?
4. What is your marital status? Single (), Single with a stable partner/cohabitate (), Married (), Widow (), Divorced/ separated ().
5. What is your religion / denomination: Christian (), Muslims (), non- believer (), Others ();
6. How long have you been in your relationship?
7. Are you living together?
8. Can you tell me more about your relationship with your husband's (partner's) family members?

9. Do you work? If yes:
- How much money do you get each month from this work?
 - Do you get money from anywhere else or from anyone else? For example, do you get any government grants, money from family, partners, and friends?
 - Altogether, how much money do you get each month?

B). Contraception / FP and HIV Infection

10. How long have you been attending ARV Clinic in Kasane Primary Hospital (KPH)?
11. Do you know anything about contraception and/or Family planning?
12. How did you first find out about family planning program? At School, Clinic, Mass media or others?
13. Do you think that sexual and reproductive health services such as family planning and/or contraception are accessible to HIV-positive women in KPH?
14. Are these services affordable in this environment?
15. Have you ever used contraception / Family planning program?
- A) If yes, which method did you use and what made you decide to enrol in F.P program?
- Why did you choose to use it?
 - For how long did you use it?
 - Was your partner aware that you were using it?, if no why?
- B) If no, why you did not opt for contraception?
16. How long have you known your HIV status? < 1 year (), 1-5 years (), > 5 years ()?
- When did you know your HIV status? Before, after or during Family planning?
 - Tell me a bit how you arrived to know HIV status. Was it motivated by Family Planning visit, PMTCT or it was a VCT?
17. Does your partner know about your HIV status?
- If No,
 - Why have you not told him?
 - How do you think your partner will react if you can tell him?
 - Why do you think he will react like this?
 - If Yes,
 - When did you tell him
 - How did you tell him, what did you say
 - How did he react
 - Why do you think he reacted like that?

viii. How did this affect your relationship?

18. Does anyone in your family know about your HIV status?

a) If no,

ix. Why have you not told anyone (them)?

x. How do you think your family members will react if you tell them?

xi. Why do you think they can react like this?

b) If yes,

xii. When did you tell him/her/them?

xiii. How did you tell him/her/them? What did you say?

xiv. How did s/he/ them react?

xv. Why do you think s/he reacted like that?

xvi. Has your HIV status affect your family relationship? How?

19. Can you say that you get support from your partner and/or family concerning your Status? Why do you say that?

C). Contraception , Childbearing Intention and HIV

20. What are your partner's expectations about child bearing and the number of Children? And why?

21. How many children do you want to have? And why?

22. What are your partner's family members (in-law) expectations about the number of Children? And why?

23. What are your family members' expectations about the number of children?

24. Have you been pregnant since knowing your HIV status?

If yes, i) how was the conditions of the baby when you delivered? Live birth/Still Birth/Abortion ?

ii) Did you enrol in PMTCT program?

25. Did you intend to be pregnant?

26. Have you ever had an unintended pregnancy?

27. Can you say that your HIV status is influencing your decision of the desired number of children? If yes, how?

28. Is there anything or anyone else that you think is influencing your decision About the number of the children you want?

29. In your opinion, what do you think can be the acceptable number of children an

HIV positive woman should have? And why?

30 Is there any factor that affect contraception uptake? If yes which one ?

D) Understanding of the role of contraception

31. What are the risks of unprotected sex with HIV positive women?

32. Do you find that the HIV-positive women contraception consumption in Kasane Primary Hospital is acceptable to prevent unintended pregnancies and possible HIV positive births? Explain.

33. How does the knowledge on use of contraception as an HIV prevention strategy Influence the way you conduct yourself?

34. Do you think there is any risk associated with pregnancy (conception) when someone is HIV- positive? If yes, what risks are you aware of?

35. What is your understanding of family planning program / contraception role ?

E) Prevention strategies

36. Which HIV prevention strategy do you usually use? Why did you choose to use it?

37. Which other strategies do you use for such prevention?

38. What are the benefits/limitations of the strategies you choose?

F) Opinion

39. Do you think HIV-positive women experience difficulties accessing contraception and/or Family planning services ? Please explain your answer.

G) Closure

40. Are there any other matters you would like to discuss with me regarding this topic?

We have now come to the end of our interview. I thank you for your openness, input and time. If you have any questions about what we have discussed, please feel free to ask me now.

ADDENDUM 6: INTERVIEW GUIDE SETSWANA VERSION

POTSOLOTSO YA SETSWANA

Lenaneo la patlisiso

Matseno

Mmatlisisi o tlabo a buisa bomme ba dingwaga tse di lesome le botlhano go ya kwa go tse di masome a mane le boferabongwe (15-49), ba ba fiwang diritibatsi ka letlhoko la bone la go nna le malwapa le gore seo ba ikaelela go se diragatsa jang. Mmatlisisi o batla go tshaloganya mabaka a a dirang gore ba tseye tsa boiphemelo ka dipalo tse di kwa tlase mo go felelang go baka boimana jo bo sa ipaakanyediwang le masea a a tsholwang a na le mogare. Mmatlisisi o tlaa batla gape go itse ditumelo le dikakanyo tsa bone ka lenaneo la tsa tthatlologanyo tsholo. Tsotlhe tse di buiwang ke sephiri, mme e bile o ka nna wa seke o arabe dipotso dingwe fa o sa phuthuloga. Potsolotso e e tlaa tsaya metsotso e le masome a mararo go ya kwa go e le masome a mane.

A) Botshelo jwa motsaya karolo

1. O dingwaga di kae?
2. O feletse fa kae ka dithutego? Primary (); Secondary (); Tertiary (college / university) ()
3. O na le bana ba le kae?
4. A o:
 - a) Tshela o le nosi, b) Na le mokapelo, c) Nyetswe, d) Moswelwa, e) Kgaogane le mokapelo
5. O wa tumelo efe?
 - a) Sekeresete, b) Muslim, c) Epe, d) Tse di sa bolelwang fa godimo
6. O na le lebaka le le kae o le mo tsalanong le mokapelo wa gago?
7. A lo nna mmogo?
8. Tshalosa ka botlalo botsalano jwa gago le ba lelwapa la mokapelo wa gago.
9. A o a bereka? Fa karabo e le ee :
 - a) Tiro e o e dirang e go amogedisa bokae kgwedi le kgwedi?
 - b) A go na le golo gonwe gape kwa o tsayang madi teng, jaaka go tswa mo pusong, masika, ditsala kgotsa mokapelo wa gago?
 - c) Fa o kopanya madi a o a fiwang ke batho, a dira bokae fa kgwedi e fela?

B) Tsa boiphemelo le kanamo ya mogare wa HIV

10. O na le lebaka le le kae o tsaya diritibatsi (ARV) mo kokelong e?
11. A o itse sengwe ka tsa boiphemelo le lenaneo la tthatologanyo tsholo?
12. Go tsile jang gore o itse ka lenaneo la tthatologanyo tsholo, TV?
13. A o akanya gore mananeo a tsa tthatologanyo tsholo le thibelo boimana a a ka dirisiwang ke bomme ba ba nang le mogare wa HIV a teng mo kokelong ya Kasane?
14. A tlhathwa ya dithuso tse e siame (madi ga a kwa godimo) mo kgaolong e?
15. A o kile wa dirisa tsa boiphemelo kgotsa tsa thibelo tsholo?
- A) Fa karabo e le ee, o dirisa mofuta ofe?
- a) O ne o dirisa mofuta ofe?
- b) O o dirisitse lebaka le le kae?
- c) A mokapelo wa gago o ne a itse gore o dirisa tsa boiphemelo?
- B) Fa karabo e le nnyaa, ke eng o sa dirise tsa boiphemelo?
16. O na le lebaka le le kae o itse ka seemo sag ago?
- a) Ngwaga go ya kwa tlase, b)Ngwaga go ya kwa go tse tlhano, c) Dingwaga tse tlhano le go feta;
- b) O itsile leng seemo sa gago, pele kgotsa morago ga go tsenelela lenaneo la tthatologanyo tsholo?
17. A mokapelo wa gago o itse seemo sa gago?
- a) Fa karabo e le nnyaa:
- i. Ke eng o sa mmolelela?
- ii. O akanya gore o tlaa dira eng kgotsa o tlaa tseega jang fa o ka mmolelela?
- iii. Ke eng o akanya gore o ka dira jaana?
- b) Fa karabo e le ee:
- iv. O mmoleletse leng?
- v. O mo reile wa reng fa o mmolelela?
- vi. O ne a reng kgotsa a dira jang?
- vii. O akanya gore ke eng a ne a dira jalo kgotsa a bua jalo?
- viii. Se se amile jang botsalano jwa lona?
18. A go na le mogwe wa balelwapa la gago yo o itseng seemo sa gago?
- a) Fa karabo ya gago e le nnyaa:
- ix. Ke eng o sa ba bolelela?

x. O akanya gore ba tlaa dira eng kgotsa ba tlaa tseega jang fa o ka ba bolelela?

xi. Ke eng o akanya gore ba ka dira jaana?

b) Fa karabo e le ee:

xii. O mmoleletse leng?

xiii. Ke eng o ba boleletse? O ba reile war eng?

xiv Ba ne bar eng kgotsa ba dira eng?

xv. O akanya gore ke eng ba ne ba dira jalo?

xvi. Seemo sa gago se amile botsalano jwa gago le balelwapa bag ago? Lo amegile jang?

19. A o bona kemonokeng kana tlhokomelo go tswa mo go balelwapa la gago kgotsa mo mokapelong wag ago? Ntsha mabaka a karabo ya gago.

C) Boiphemelo & mogare wa HIV

20. Ditsholofelo tsa mokapelo wa gago ka tsholo bana ke dife? Ka go reng?

21. O batla go nna le bana ba le kae?

22. Ditsholofelo tsa balelwapa la mokapelo wa gago ka go tshola bana ke eng? Ka go reng?

23. Ditsholofelo tsa balelwapa la gago ka go tshola bana ke eng?

24. A o kile wa ima o sena go itse seemo sa gago?

a) Fa karabo ya gago e le ee, a ngwana o belegwe a tshela kgotsa a tlhokafetse?

b) A o ne wa tsenelela lenaneo la thibelo ya mogare go tswa mo go mmangwana go ya kwa loseeng?

25. A o ne o na le maikaelelo a go ima?

26. Ao kile wa ima o ne o sa batle?

27. Aseemo sa gago se na le seabe mo palong ya bana e o e batlang? Fa karabo ya gago e le ee, go na le seabe jang?

28. A o akanya gore go na le mongwe kgotsa sengwe se se rotloetsang ditshwetso tsa gago ka palong ya bana e o e batlang ?

29. Go ya ka wena o bona palo ya bana e e siametseng mme yo o tshelang ka mogare e le bokae? Ka go reng ?

30. Bodiphatsa jwa tlhakanelo dikobo ee sa sireletsegang mo go bomme ba ba tshelang ka mogare ke eng?

D) Se o se tlhaloganyang ka tsa boiphelo

31. A o bona dipalo tsa bomme ba ba tshelang ka mogare ba ba tsayang tsa boiphemelo mo Kasane di lekanetse go ka thibela boimana jo bo sa baakanyediwang le go tshola bana ba ba nang le mogare? Tlhalosa karabo ya gago.
32. Kitso ya tiriso ya tsa boiphemelo mo go thibeleng kanamo ya mogare wa HIV e rotloetsa ditshwetso tsa boitshwaro jwa gago jang?
33. A go na le bodiphatsa bongwe jwa go ima fa mme a na le mogare? Fa karabo e le ee, o itse bodiphatsa bofe?
34. O tlhaloganya eng ka tlhatlologanyo tsholo?
35. Kitso Seabe sa tsa boiphemelo mogare wa HIV ?

E) Thibelo mogare

36. O dirisa mofuta ofe go thibela kanamo ya mogare wa HIV? Ke eng o o tlhophile?
37. O a tle o dirise mofuta efe gape?
38. Mosola le tlhokamosola wa mofuta o wa thibelo mogare ke eng?

F) Mogopolo

39. A o akanya gore bomme ba ba tshelasng ka mogare wa HIV ba na le bothata le go bona tsa boiphemelo? Tlhalosa karabo ya gago.

G) Bokhutlo

40. A go na le dintlha dingwe gape tse o batlang go di buisana le nna di itebagantse le kgang e? Re tsile mo bokhutlong jwa potsolotso ya rona. Ke lebogetse tirisano mmgo, kemonokeng le nako ya gago. Fa go na le dipotsso mo go tse re ntseng re buisana ka tsone phuthuloga o botse mo nakong e.

ADDENDUM 7: LETTER FOR PERMISSION TO HRDD

Ministry of Health
Health Research Development Division
P. Bag 0038, Gaborone
Gaborone / Botswana.

28th June 2012

Dear Sir / Madam

RE: Intention to Conduct a research project at ARV Clinic In Kasane Primary Hospital

Dr Ngeleka Albert Lufuluabo, a Master of Philosophy student in HIV and AIDS Management (Student Number: 16897765), at the Africa Centre for HIV/AIDS Management at Stellenbosch University intend to conduct research at ARV Clinic at Kasane Primary Hospital in Chobe Health district on **the role of contraception in HIV prevention among HIV- positive women.**

The target group will be HIV-positive women of reproductive age group whether or not on treatment. The sample size will be 25 patients and will be randomly selected. Participants selected will be interviewed for opinions on contraception uptake, factors that hinder the uptake of contraception and role of contraception in HIV prevention. All necessary precautions will be taken to ensure that the information collected from each interview will not be accessible by any other person and remain confidential. The research is primarily academic but the results of the study will be submitted to the Ministry of Health.

I therefore request permission to carry out this study at the above mentioned facility. The study should run between July 2012 and September 2012. Feel free to contact me if you have any further questions.

Kind Regards.

Dr.Ngeleka Albert Lufuluabo
Senior Medical Officer
Kasane Primary Hospital
C:+267 74139522
T:+267 6251476
E:akanguvu@yahoo.fr

Approval is for academic fulfillment only. Copies should also be submitted to all other relevant authorities.

Continuing Review

In order to continue work on this study (including data analysis) beyond the expiry date, submit a Continuing Review Form for Approval at least three (3) months prior to the protocol's expiration date. The Continuing Review Form can be obtained from the Health Research Division Office (HRDD), Office No. 9A 11 or Ministry of Health website: www.moh.gov.bw or can be requested via e-mail from Mr. Kgomotso Motlhanka, e-mail address: kgmmotlhanka@gov.bw As a courtesy, the HRDD will send you a reminder email about eight (8) weeks before the lapse date, but failure to receive it does not affect your responsibility to submit a timely Continuing Report form

Amendments

During the approval period, if you propose any change to the protocol such as its funding source, recruiting materials, or consent documents, you must seek HRDC approval before implementing it. Please summarize the proposed change and the rationale for it in the amendment form available from the Health Research Division Office (HRDD), Office No. 9A 11 or Ministry of Health website: www.moh.gov.bw or can be requested via e-mail from Mr. Kgomotso Motlhanka, e-mail address: kmotlhanka@gov.bw . In addition submit three copies of an updated version of your original protocol application showing all proposed changes in bold or "track changes".

Reporting

Other events which must be reported promptly in writing to the HRDC include:

- Suspension or termination of the protocol by you or the grantor
- Unexpected problems involving risk to subjects or others
- Adverse events, including unanticipated or anticipated but severe physical harm to subjects.

If you have any questions please do not hesitate to contact Mr. P. Khulumani at pkhulumani@gov.bw, Tel +267-3914467 or Lemphi Moremi at lamoremi@gov.bw or Tel: +267-3632464. Thank you for your cooperation and your commitment to the protection of human subjects in research.

Yours sincerely



P. Khulumani
For Permanent Secretary

